Pioneer
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42 & 61 Inch Plasma
Field Service and Training Guide

PRO-1410HD
PDP-614MX
PDP-424MV

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Pioneer
SERVICE

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Preface

This technical training guide will address the disassembly and adjustments of 42 and 61 inch Pioneer Plasma Display models.

This guide was designed as a servicing aid and is not intended to replace the service manual. The student should have the appropriate service manual on hand when when using this guide. Data in the service manual for this unit contains specific information on safety, parts and adjustments.

Safety information

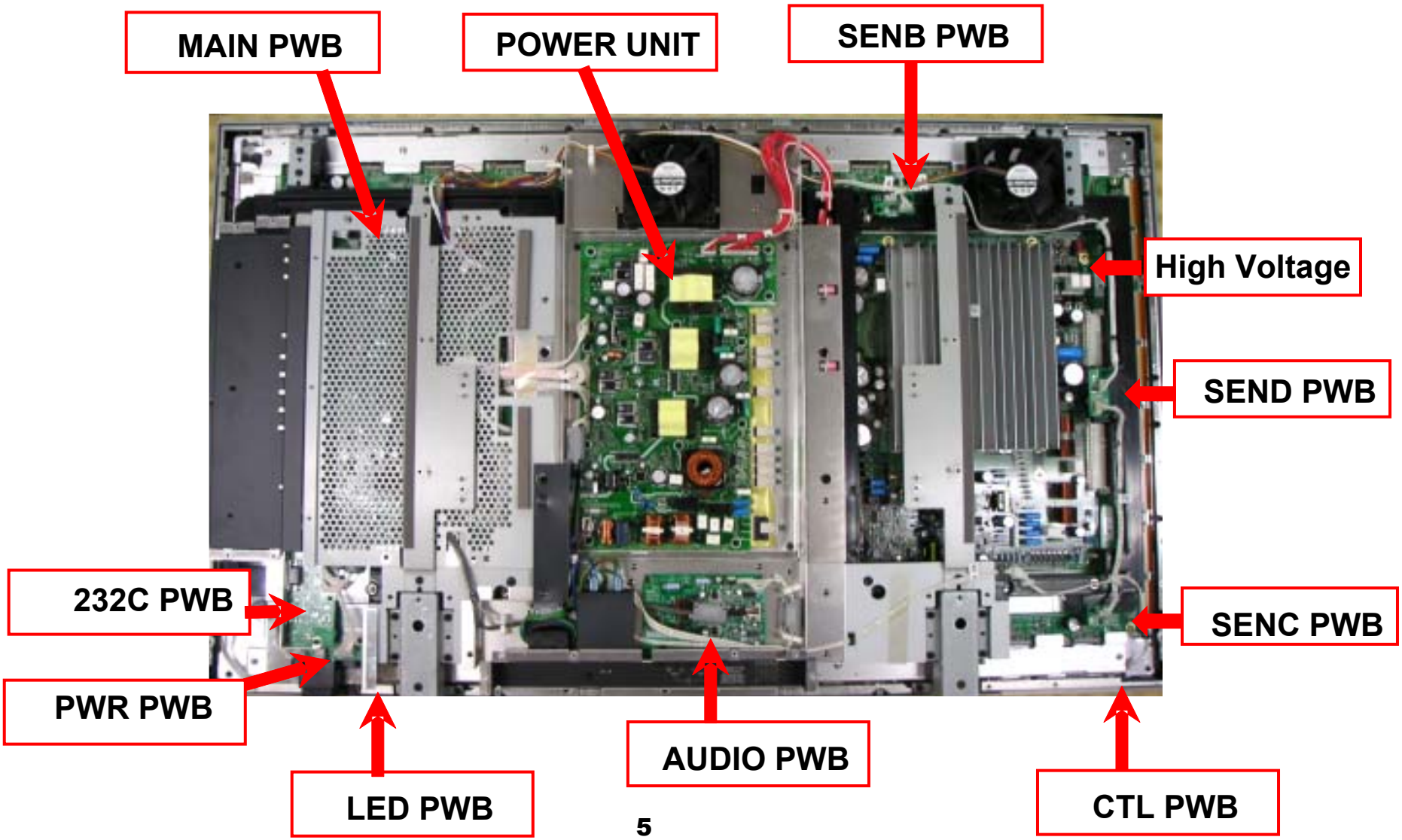
Important safety data for this Pioneer model is contained in the service manual. Before returning the unit to the customer, complete all product safety obligations and tests. Technicians who bypass safety features or fail to carry out safety checks may expose themselves and others to possible injury, and may be liable for any resulting damages.

For more information on electronic circuits and block diagrams refer to the Service manual.

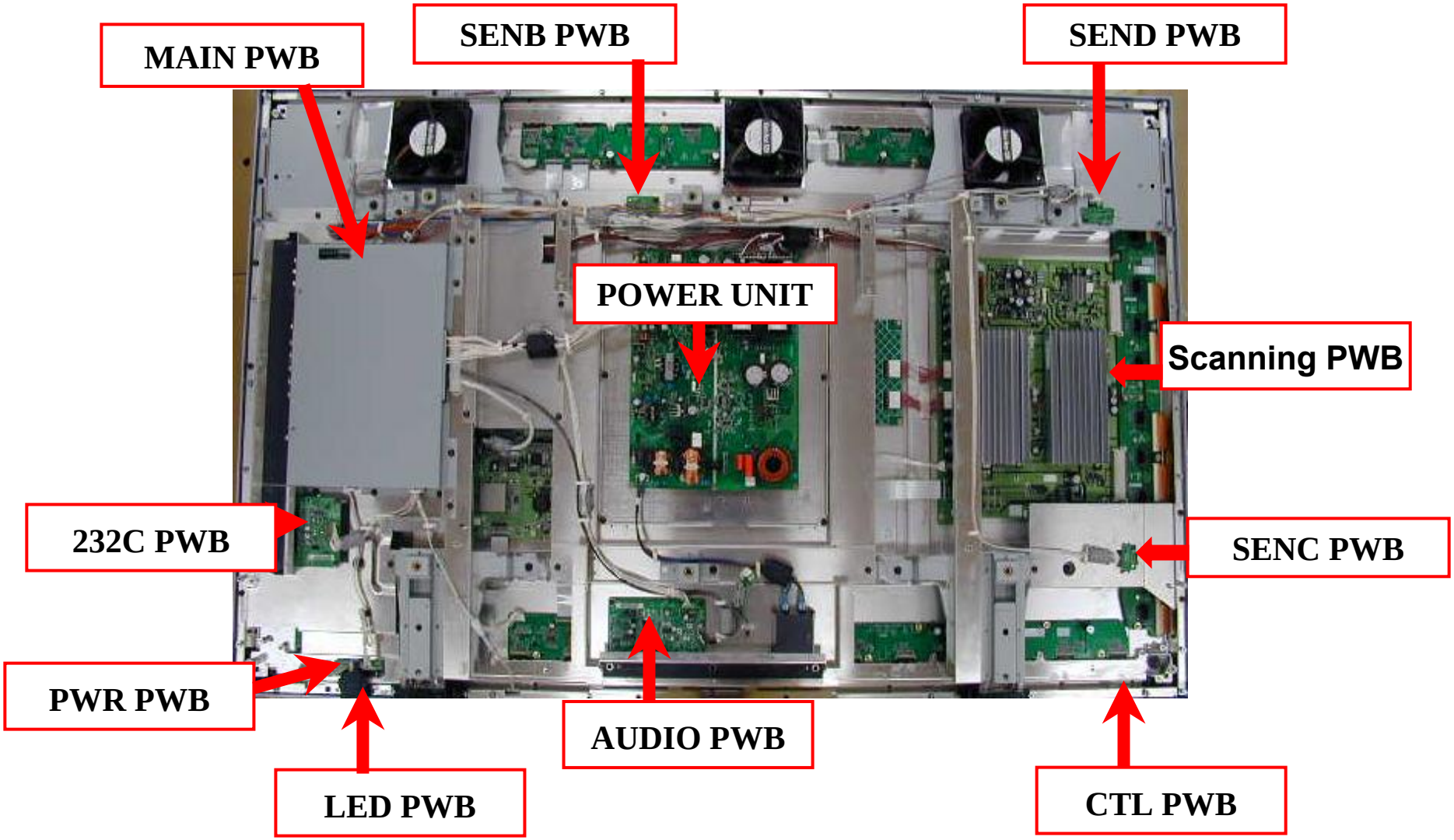
Lead in the solder used in this product is a known reproductive toxicant which may cause birth defects or other reproductive harm. (California Health and Safety Code Section 25249.5).

When servicing this or handling circuit boards and other components which contain solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

PDP-424MV PCB Layout



PRO-1410HD & PDP-614MX



Function of the PCB’s

- **MAIN PWB ASSY**
  - ✧ **Selector**
    - ● **Video selector(Video, RGB/YC/V)**
    - ● **Sync selector(Sync on green, HD,VD,Y)**
  - ✧ **Video decoder**
    - ● **3.58NTSC Motion compensated 3D Y/C separation**
    - ● **PAL Motion compensated 2D Y/C separation**
    - ● **Color demodulation**
    - ● **Digital chroma decoder**
  - ✧ **DVI receiver**
    - ● **HDCP**

Function of the PCB’s

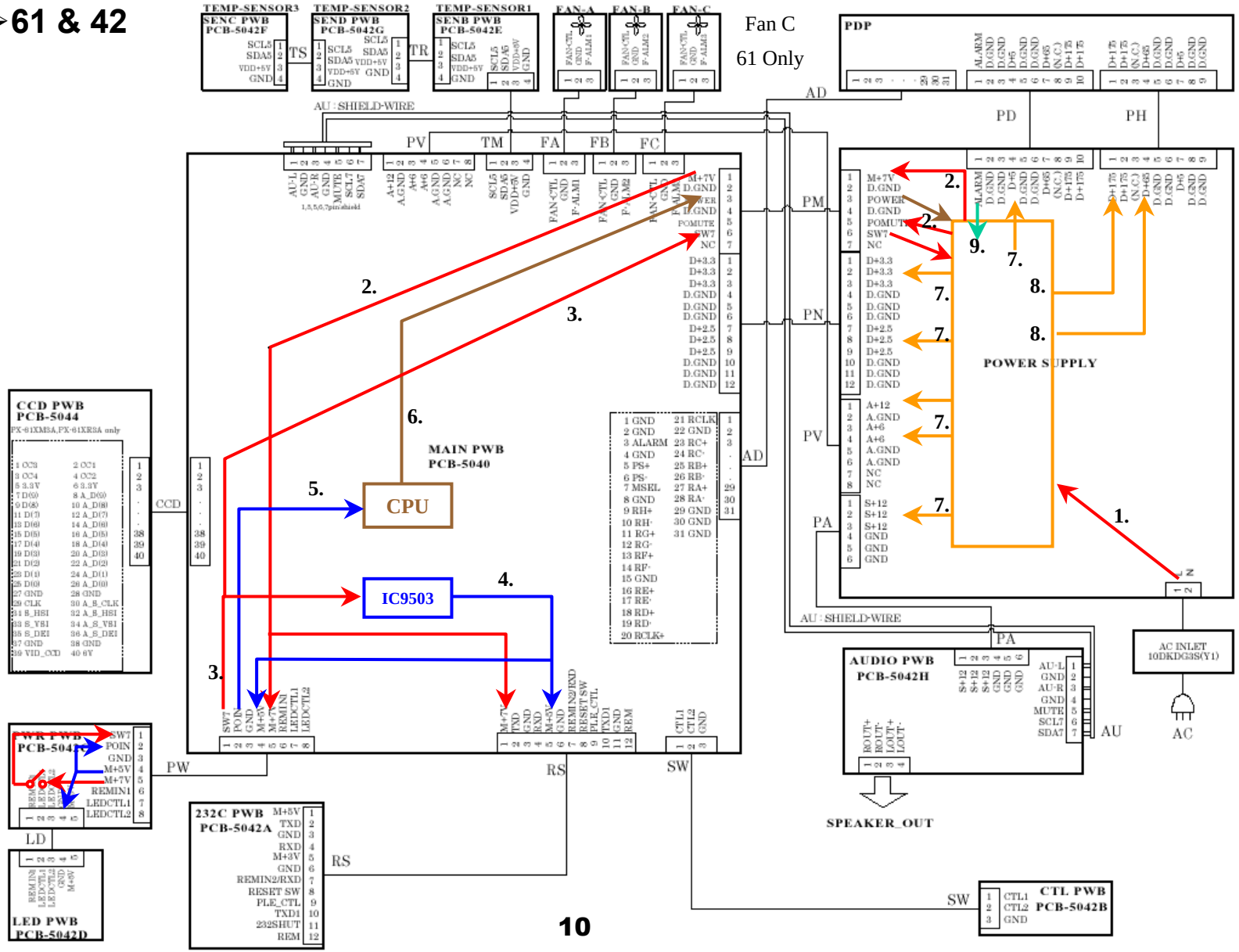
- **MAIN PWB ASSY**
  - ✧**AD converter**
  - ✧**IP converter**
  - ✧**Resolution converter(Frame rate converter)**
  - ✧**Contrast,Bright**
  - ✧**Color temperature adjustment**
  - ✧**De-Gamma converter(Error diffusion,Dither)**
  - ✧**LVDS(Low voltage differential signal)**
  - ✧**OSD(On screen display)**
  - ✧**SPLIT SCREEN**

Function of each PWB

- **AUDIO PWB ASSY**
  - ✧ **AUDIO AMPLIFIER**
- **SENB PWB,SENC PWB ,SEND PWB**
  - ✧ **Temperature sensor**
- **232C PWB**
  - ✧ **Remote in-out, 232C input terminal**
- **CTL PWB**
  - ✧ **INPUT SELECT/EXIT,LEFT/+,RIGHT/+**
  - ✧ **VOLUME UP/DOWN,PROCEED**
- **PWR PWB**
  - ✧ **Power switch**
- **LED PWB**
  - ✧ **POWER/STANDBY LED**
- **POWER UNIT**

Normal Power On Operation

➢61 & 42



Normal Power On Operation

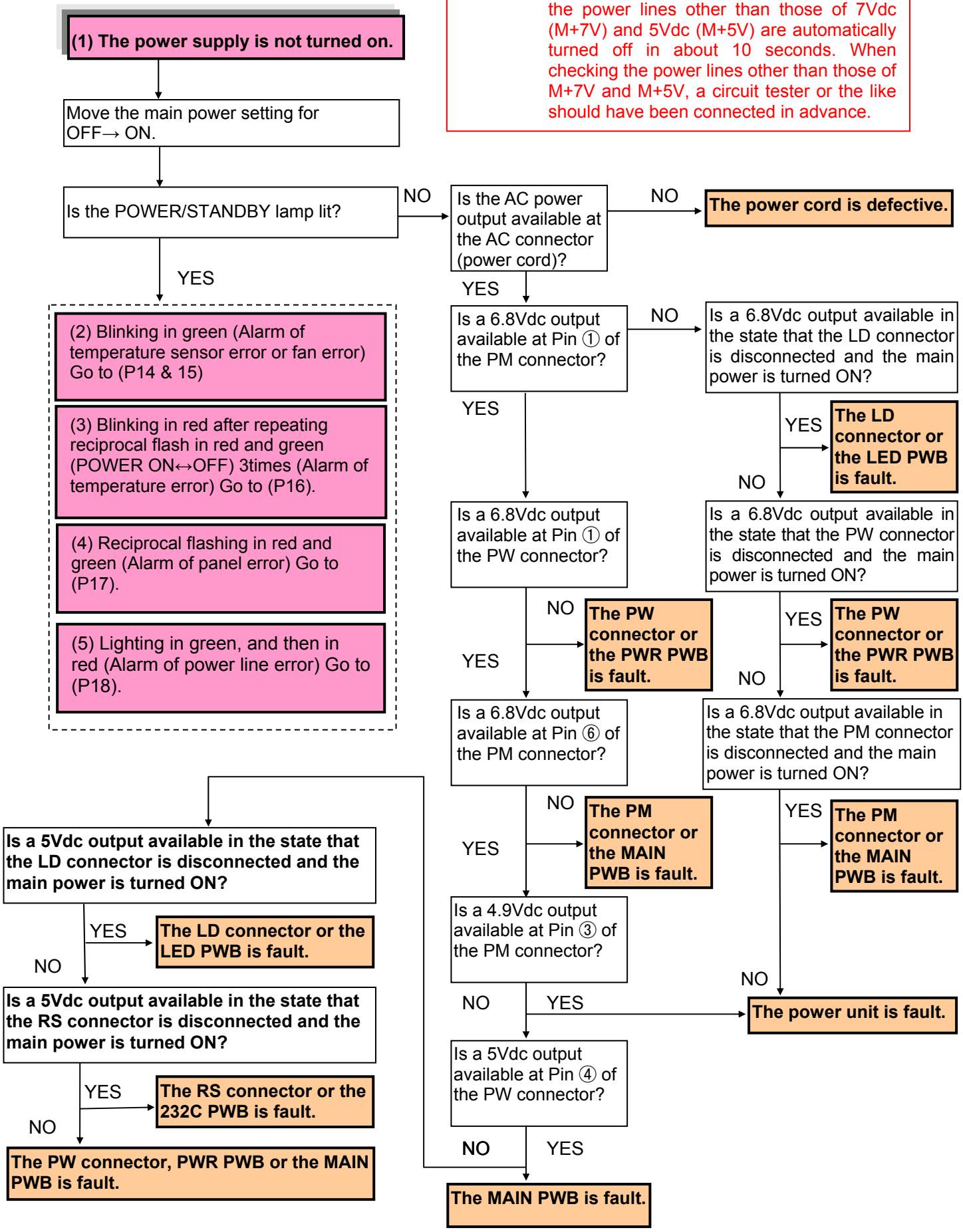
1. **AC line attached to Power Supply.**
2. **Power Supply outputs a Power Mute voltage at +4.8 from Connector PM pin 5 (POMUTE). The Power Supply also outputs a +7 volt supply to the Main Microprocessor at Connector PM pin 1 (M+7).**
3. **The +7 volt supply now on the Main PCB goes to the RS232 PCB, Power Switch PCB and IC9503 the +5 volt regulator. Additionally the +7 volt supply returns back to the Power Supply as one of the Power Start Up signals.**
4. **The +5 volt regulator (IC9503) outputs to the RS232 and Power Switch PCB's. At this time the Main Microprocessor sets the state to Standby and the front panel LED lights Red.**
5. **From Standby pressing the Power button will send a +5 volt signal to the Main Microprocessor from the Power Switch PCB Connector PW pin 2 (POIN).**
6. **The Main Microprocessor outputs the Power On +5 volt signal to the Power Supply from Connector PM pin 3 (POWER). At this time the Power Relay engages.**
7. **The Power Supply upon receiving the Power On Signal supplies all other secondary supply voltages.**
8. **After secondary supply voltages come up the power supplies for VS (170) and VD (65) turn on.**
9. **NOTE: Panel Alarm Input Line can shutdown the Power Supply (High = Normal).**

42 & 61 Inch Common Trouble Shooting

Page:	Trouble Area:
13	Power Failure
14 & 15	Blinking in Green
16	Blinking in Red
17	Blinking in Red & Green
18	Lighting Green then Red
19	No Picture
20	Audio
21 &22	Remote
23 &24	Closed Caption

1. Power failure

(Caution) If any abnormality is sensed in such a manner that the LED flashes or lights, all the power lines other than those of 7Vdc (M+7V) and 5Vdc (M+5V) are automatically turned off in about 10 seconds. When checking the power lines other than those of M+7V and M+5V, a circuit tester or the like should have been connected in advance.


(1) The power supply is not turned on.
Move the main power setting for OFF→ ON.
Is the POWER/STANDBY lamp lit?
NO
YES
Is the AC power output available at the AC connector (power cord)?
NO
The power cord is defective.
YES
(2) Blinking in green (Alarm of temperature sensor error or fan error) Go to (P14 & 15)
(3) Blinking in red after repeating reciprocal flash in red and green (POWER ON↔OFF) 3times (Alarm of temperature error) Go to (P16).
(4) Reciprocal flashing in red and green (Alarm of panel error) Go to (P17).
(5) Lighting in green, and then in red (Alarm of power line error) Go to (P18).
Is a 6.8Vdc output available at Pin ① of the PM connector?
NO
Is a 6.8Vdc output available in the state that the LD connector is disconnected and the main power is turned ON?
YES
The LD connector or the LED PWB is fault.
NO
Is a 6.8Vdc output available at Pin ① of the PW connector?
Is a 6.8Vdc output available in the state that the PW connector is disconnected and the main power is turned ON?
NO
The PW connector or the PWR PWB is fault.
YES
The PW connector or the PWR PWB is fault.
Is a 6.8Vdc output available at Pin ⑥ of the PM connector?
Is a 6.8Vdc output available in the state that the PM connector is disconnected and the main power is turned ON?
NO
The PM connector or the MAIN PWB is fault.
YES
The PM connector or the MAIN PWB is fault.
Is a 4.9Vdc output available at Pin ③ of the PM connector?
NO
YES
The power unit is fault.
Is a 5Vdc output available at Pin ④ of the PW connector?
NO
YES
The MAIN PWB is fault.
Is a 5Vdc output available in the state that the LD connector is disconnected and the main power is turned ON?
YES
The LD connector or the LED PWB is fault.
NO
Is a 5Vdc output available in the state that the RS connector is disconnected and the main power is turned ON?
YES
The RS connector or the 232C PWB is fault.
NO
The PW connector, PWR PWB or the MAIN PWB is fault.

(2) Blinking in green

① Alarm of temperature sensor error

Blinking in green (intervals of 2 seconds)

Turn off the main power supply.

Pressing the [MENU] key of the product, turn on the main power supply to cancel alarming.

Press the remove control keys in the sequential order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] and enter the factory adjustment menu. Press the [MENU/ENTER] key to display the FAN SET menu (P2/11).

FAN SET

FAN SET

FAN MODE	H	CONT ENA	–
FAN OFF/L	–	CONT UP	–
FAN L/M	–	CONT TIME	–
FAN M/H	–	UP STEP	2
SF SAVE	075	DOWN STEP	2
PLE SAVE	070	READ TIME	60
T ALM	095	TEMP LEVEL	1
RET TME	030		
PLE TIME	001		
T1 030	T2 025		
T3 030	T4 –	MODE	2
IC ERROR	–		
[MENU/ENTER] NEXT		[EXIT] PREV	2/11

Is there a display of numerals (almost room temperatures) at the right side of [T1, T2, T3]?

YES → **The MAIN PWB is fault.**

NO

Is there a display of [-] for all the numerals at the right side of [T1, T2, T3]?

NO → **When a [-] display is presented, the PWB with the symbol shown below is fault. T1: SEND PWB, T2: SENB PWB, T3: SENC PWB**

YES

Are there a 3.3Vdc output at Pin ③ and a clock signal (3.3Vpp) at Pins ① and ④ of the TS in the state that the TS connector is disconnected and the main power supply is turned on?

YES → **The TS connector or the SENC PWB is fault.**

NO

Are there a 3.3Vdc output at Pin ③ and a clock signal (3.3Vpp) at Pins ① and ④ of the TR in the state that the TR connector is disconnected and the main power supply is turned on?

YES → **The TR connector or the SEND PWB is fault.**

NO

Are there a 3.3Vdc output at Pin ③ and a clock signal (3.3Vpp) at Pins ① and ④ of the TM in the state that the TM connector is disconnected and the main power supply is turned on?

YES → **The TM connector or the SENB PWB is fault.**

NO → **The MAIN PWB is fault.**

② Alarm of fan error

Blinking in green (intervals of 0.5seconds)

Turn off the main power supply.

Pressing the [MENU] key of the product, turn on the main power supply to cancel alarming.

Is the fan running?
(Caution) When alarming is canceled, [FAN MODE] of FAN SET (P2/11) in the factory adjustment menu automatically moves from [ENA] to [H], thus causing the fan to run.

FAN SET

FAN MODE	ENA	CONT ENA	–
FAN OFF/L	–	CONT UP	–
FAN L/M	–	CONT TIME	–
FAN M/H	–	UP STEP	2
FAN SAVE	075	DOWN STEP	2
PLE SAVE	070	READ TIME	60
T ALM	095	TEMP LEVEL	1
RET TME	030		
PLE TIME	001		
T1 030	T2 025		
T3 030	T4 –	MODE 2	
IC ERROR	–		
[MENU/ENTER] NEXT		[EXIT] PREV	2/11

FAN SET

FAN MODE	H	CONT ENA	–
FAN OFF/L	–	CONT UP	–
FAN L/M	–	CONT TIME	–
FAN M/H	–	UP STEP	2
FAN SAVE	075	DOWN STEP	2
PLE SAVE	070	READ TIME	60
T ALM	095	TEMP LEVEL	1
RET TME	030		
PLE TIME	001		
T1 030	T2 025		
T3 030	T4 –	MODE 2	
IC ERROR	–		
[MENU/ENTER] NEXT		[EXIT] PREV	2/11

YES → Is there a 3.3Vdc output at Pin ③ of the FA and FB, FC connectors?
YES → **The fan is out of order on the side where a 3.3Vdc output is generated.**
NO → **The MAIN PWB is fault.**

NO → Is there a voltage output of 11.3Vdc for the 42inch model, and 9.3Vdc for the 61inch models respectively, at Pin 1 of the FA, FB, and FC connectors?
YES → **The FAN-A/FAN-B/FAN-C is fault.**

(Caution) The FAN-C and FC connectors are used only for the 61 inch Series.

NO → Is there a voltage output of 11.3Vdc for the 42inch model, and 9.3Vdc for the 61inch models, respectively, when the FA connector is disconnected and the mains power is turned ON?
YES → **The FAN-A is fault.**

NO → Is there a voltage output of 11.3Vdc for the 42inch model, and 9.3Vdc for 61inch models, respectively, when the FB connector is disconnected and the mains power is turned ON?
YES → **The FAN-B is fault.**

NO → Is there a voltage output of 11.3Vdc for 42 inch model, and 9.3Vdc for the 61 inch models, respectively, when the FC connector is disconnected and the mains power is turned ON?
YES → **The FAN-C is fault.**
NO → **The MAIN PWB is fault.**

(Caution) In the FAN MODE, [ENA] is automatically recovered when the main power is turned OFF → ON.

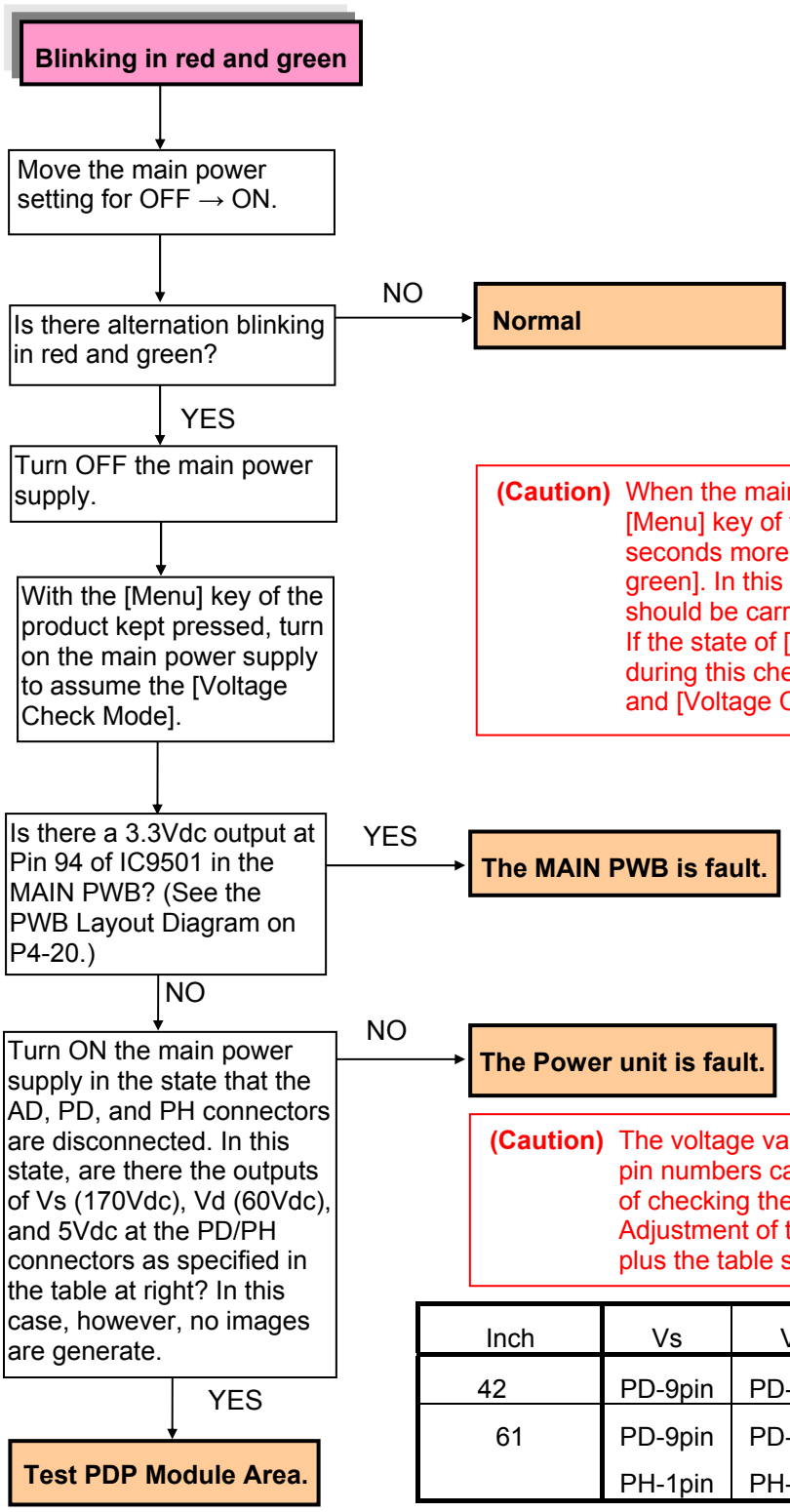
(3) Blinking in red (Alarm of temperature error)

Since the internal temperature is too high in the product, the temperature protector has been actuated. In such a case, the following actions should be taken immediately:

1. Turn off the main power supply and pull out the power cord from the wall outlet.
2. Wait for about 60 minutes until the temperature in the main unit lowers.
3. Check whether the heat discharge port is covered with dust or the like. If yes, remove the clogging substance.
4. If the unit is used where the ambient temperature is high, it should be moved to an adequate place (air temperature ranging from 5°C to 35°C).

(4) Alternation blinking in red and green (Alarm of PDP error)

(Caution) How to reset the alarming condition
Pressing the [Input Select] key of the product, turn on the main power supply of the main unit. In this state, keep pressing the [Input Select] key for more than 2 seconds until alarming is canceled. Make confirmation by the method specified below.


Blinking in red and green
Move the main power setting for OFF → ON.
Is there alternation blinking in red and green?
NO
Normal
YES
Turn OFF the main power supply.
With the [Menu] key of the product kept pressed, turn on the main power supply to assume the [Voltage Check Mode].
Is there a 3.3Vdc output at Pin 94 of IC9501 in the MAIN PWB? (See the PWB Layout Diagram on P4-20.)
YES
The MAIN PWB is fault.
NO
Turn ON the main power supply in the state that the AD, PD, and PH connectors are disconnected. In this state, are there the outputs of Vs (170Vdc), Vd (60Vdc), and 5Vdc at the PD/PH connectors as specified in the table at right? In this case, however, no images are generate.
NO
The Power unit is fault.
YES
Test PDP Module Area.

(Caution) When the main power supply is turned on with the [Menu] key of the product kept pressed, it takes 30 seconds more to assume the state of [blinking in red and green]. In this time period, the following voltage checks should be carried out.
If the state of [blinking in red and green] is assumed during this checking, take actions of [Alarm Canceling] and [Voltage Check Mode Setup] again.

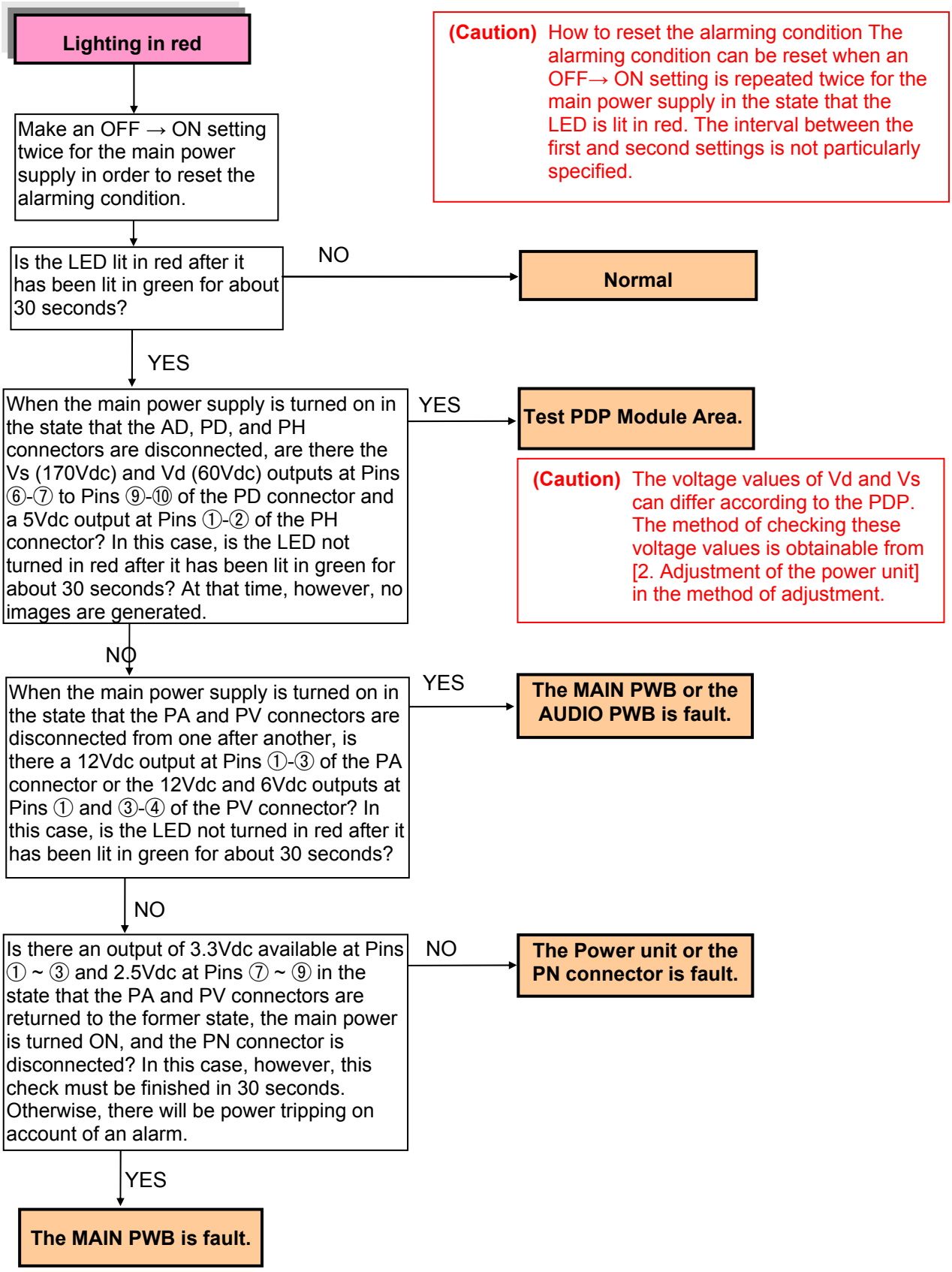
(Caution) The voltage values of Vd and Vs and also the connector pin numbers can differ according to the PDP. The method of checking these voltage values is obtainable from [2. Adjustment of the power unit] in the method of adjustment plus the table specified below.

Inch	Vs	Vd	GND	5Vdc	GND
42	PD-9pin	PD-7pin	PD-5pin	PH-1pin	PH-3pin
61	PD-9pin PH-1pin	PD-7pin PH-4pin	PD-5pin PH-5pin	PD-4pin PH-7pin	PD-5pin PH-5pin

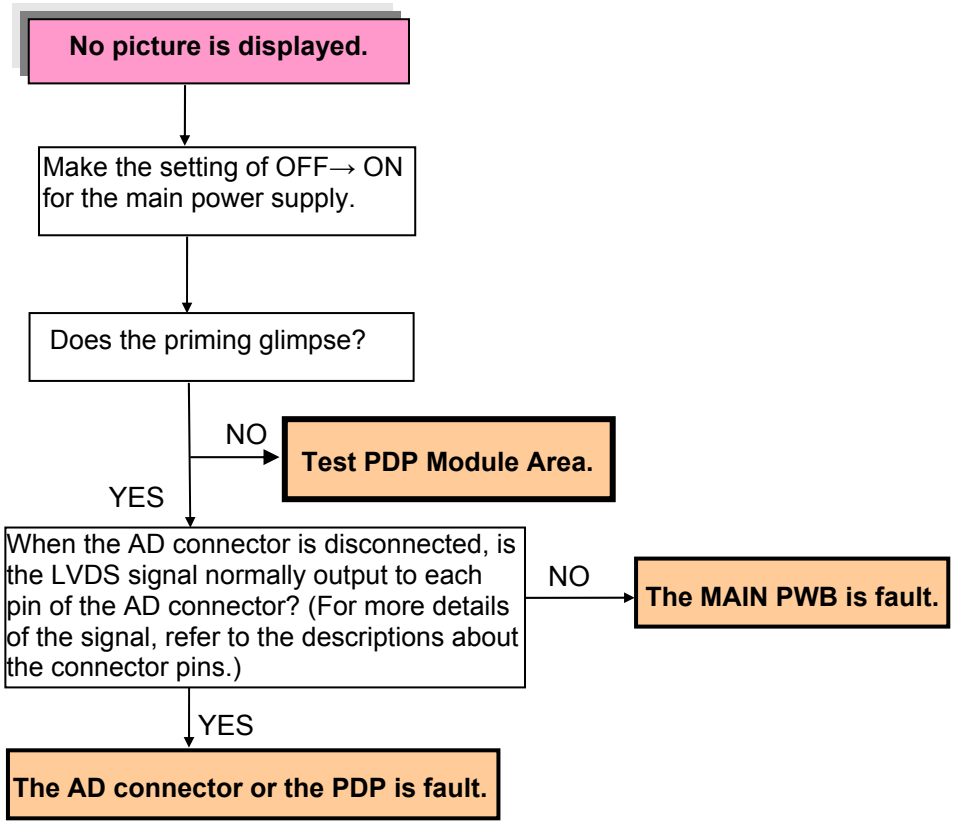
(

(5) Lighting in green, and then in red (Alarm of power voltage error)

Unlike [lighting in red] in the STANDBY mode, [lighting in green] continues for about 30 seconds without any output of images and audio signals. Since then, the mode turns into [lighting in red].


Lighting in red
Make an OFF → ON setting twice for the main power supply in order to reset the alarming condition.
(Caution) How to reset the alarming condition The alarming condition can be reset when an OFF→ ON setting is repeated twice for the main power supply in the state that the LED is lit in red. The interval between the first and second settings is not particularly specified.
Is the LED lit in red after it has been lit in green for about 30 seconds?
NO
Normal
YES
When the main power supply is turned on in the state that the AD, PD, and PH connectors are disconnected, are there the Vs (170Vdc) and Vd (60Vdc) outputs at Pins ⑥-⑦ to Pins ⑨-⑩ of the PD connector and a 5Vdc output at Pins ①-② of the PH connector? In this case, is the LED not turned in red after it has been lit in green for about 30 seconds? At that time, however, no images are generated.
YES
Test PDP Module Area.
(Caution) The voltage values of Vd and Vs can differ according to the PDP. The method of checking these voltage values is obtainable from [2. Adjustment of the power unit] in the method of adjustment.
NO
When the main power supply is turned on in the state that the PA and PV connectors are disconnected from one after another, is there a 12Vdc output at Pins ①-③ of the PA connector or the 12Vdc and 6Vdc outputs at Pins ① and ③-④ of the PV connector? In this case, is the LED not turned in red after it has been lit in green for about 30 seconds?
YES
The MAIN PWB or the AUDIO PWB is fault.
NO
Is there an output of 3.3Vdc available at Pins ① ~ ③ and 2.5Vdc at Pins ⑦ ~ ⑨ in the state that the PA and PV connectors are returned to the former state, the main power is turned ON, and the PN connector is disconnected? In this case, however, this check must be finished in 30 seconds. Otherwise, there will be power tripping on account of an alarm.
NO
The Power unit or the PN connector is fault.
YES
The MAIN PWB is fault.

(8) No pictures [**(Caution)** The voltage outputs of Vs = 170V and Vd = 64V, 5Vdc are always generated, but the LED is not flashing or lighting for alarming. However, the voltage values will differ according to the MODULE.]


No picture is displayed.
Make the setting of OFF→ ON for the main power supply.
Does the priming glimpse?
NO
Test PDP Module Area.
YES
When the AD connector is disconnected, is the LVDS signal normally output to each pin of the AD connector? (For more details of the signal, refer to the descriptions about the connector pins.)
NO
The MAIN PWB is fault.
YES
The AD connector or the PDP is fault.

3. Audio errors

(Caution) In regard to the method of audio input setting, refer to the specifications and the instruction manual to confirm that all the setting is correct. Then, troubleshooting can be carried out. It must be noted that the protector functions and no audio output is available if the opposing electrodes of the speaker output or the speaker output and the ground (GND) are short-circuited. In such a case, turn off the main power supply and make the connections correctly. The protector is reset when the main power supply is turned on after that

Audio errors

In the state that the speaker cable is disconnected, is the audio signal output available at the speaker terminal?

YES → **The speaker or the speaker cable is fault.**

NO

Is the voltage output specified below available at each pin of the PA connector in the AUDIO PWB?

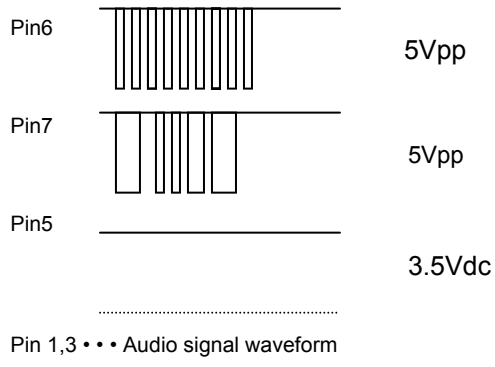
NO → **The power unit or the PA connector is fault.**

Pin_NO	Name	Voltage
1	S+12	12Vdc
2	S+12	12Vdc
3	S+12	12Vdc
4	GND	GND
5	GND	GND
6	GND	GND

YES

Is the waveform specified below output to the AU connector of the AUDIO PWB?

NO → **The MAIN PWB or the AU connector is fault.**



YES

The AUDIO PWB is fault.

4. Remote control not effective

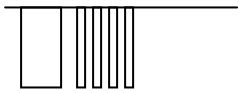
(1) The wired remote control is not effective.

① When a single item is used

(Caution) The wired remote control is not effective if the setting of [PLE LINK], or [Repeat TIMER] is ON, or if the setting of [ID NUMBER] has been made. Therefore, such a setting should be turned off, without. Since then, troubleshooting can be carried out.

The wired remote control is not effective.

Is there a signal output specified below at Pin 7 of the RS connector?

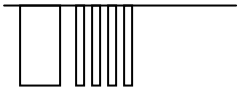


3.3Vpp

YES → **The RS connector or the MAIN PWB is fault.**

NO

Is there a signal output specified below at Pin 3 of the M2003? (Refer to the PWB layout diagram on Page P4-21.)



5Vpp

NO → **Is there a 3.3Vdc output at Pin 2 of the M2003? (Refer to the PWB layout diagram on Page P4-21.)**

YES → **The remote control or the remote control cable is fault.**

NO → **The RS232C PWB is fault.**

YES

When the RS connector is disconnected, is there a signal output specified below at the RS connector of the MAIN PWB?

Pin No.	Pin name	Voltage
1	M+5V	5Vdc
5	M+3.3V	3.3Vdc

NO → **The RS connector or the MAIN PWB is fault.**

YES

The 232C PWB is fault.

② When a daisy chain (including the video wall) is used

The wired remote control is not effective.

Are the 0Vdc and 5Vdc outputs respectively available at Pins 9 and 10 of the RS connector in the standard product of 232C PWB?

YES → Is there a clock signal output at Pin 3 of the M2004? (Refer to the PWB layout diagram on Page P8-19.)

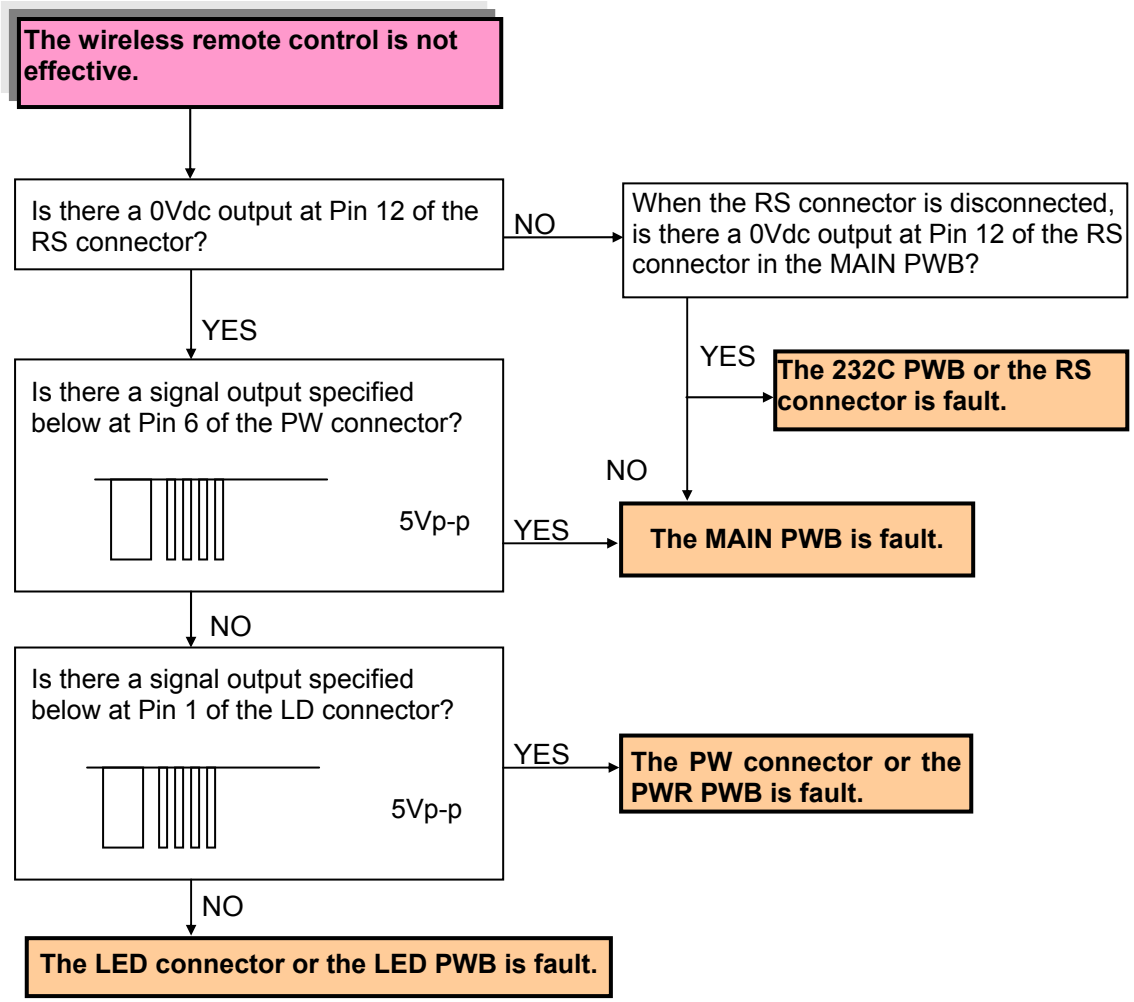
YES → **Check the products of second and thereafter according to "1 When a single item is used."**

NO → **The 232C PWB is fault.**

NO → **The MAIN PWB is fault.**

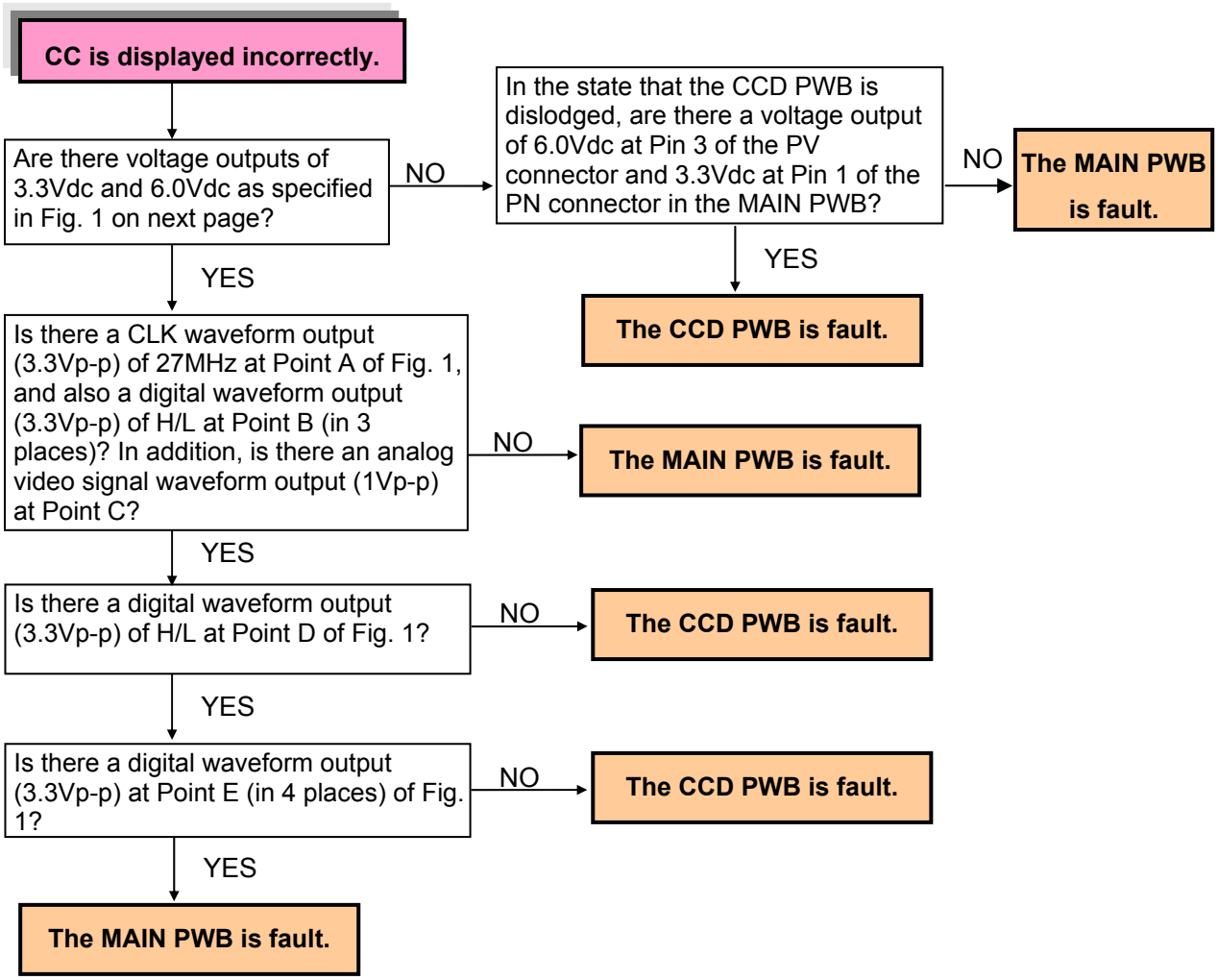
(2) The wireless remote control is not effective.

(Caution) Since the detection of “wired” or “wireless” is conducted for the remote control through the remote terminal, it is necessary to pull out the remote control cable from the remote terminal. Troubleshooting should be carried out after confirming that “IR REMOTE” is set at ON and that “ID NUMBER” is at ALL according to the user’s menu.


The wireless remote control is not effective.
Is there a 0Vdc output at Pin 12 of the RS connector?
NO
When the RS connector is disconnected, is there a 0Vdc output at Pin 12 of the RS connector in the MAIN PWB?
YES
YES
The 232C PWB or the RS connector is fault.
Is there a signal output specified below at Pin 6 of the PW connector?
5Vp-p
NO
YES
The MAIN PWB is fault.
NO
Is there a signal output specified below at Pin 1 of the LD connector?
5Vp-p
YES
The PW connector or the PWR PWB is fault.
NO
The LED connector or the LED PWB is fault.

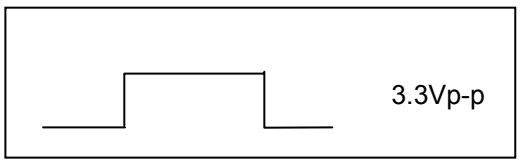
5. The closed caption (CC) is displayed incorrectly.)

(Note) Only the models for North America. The PCB-5044 (CCD PWB) is not installed in other models. Checks are needed by applying a signal output to the video input circuit, which is equivalent to the closed caption.

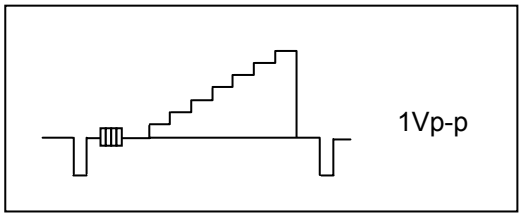

CC is displayed incorrectly.
Are there voltage outputs of 3.3Vdc and 6.0Vdc as specified in Fig. 1 on next page?
NO
In the state that the CCD PWB is dislodged, are there a voltage output of 6.0Vdc at Pin 3 of the PV connector and 3.3Vdc at Pin 1 of the PN connector in the MAIN PWB?
NO
The MAIN PWB is fault.
YES
The CCD PWB is fault.
YES
Is there a CLK waveform output (3.3Vp-p) of 27MHz at Point A of Fig. 1, and also a digital waveform output (3.3Vp-p) of H/L at Point B (in 3 places)? In addition, is there an analog video signal waveform output (1Vp-p) at Point C?
NO
The MAIN PWB is fault.
YES
Is there a digital waveform output (3.3Vp-p) of H/L at Point D of Fig. 1?
NO
The CCD PWB is fault.
YES
Is there a digital waveform output (3.3Vp-p) at Point E (in 4 places) of Fig. 1?
NO
The CCD PWB is fault.
YES
The MAIN PWB is fault.

Waveform at Point B/D/E

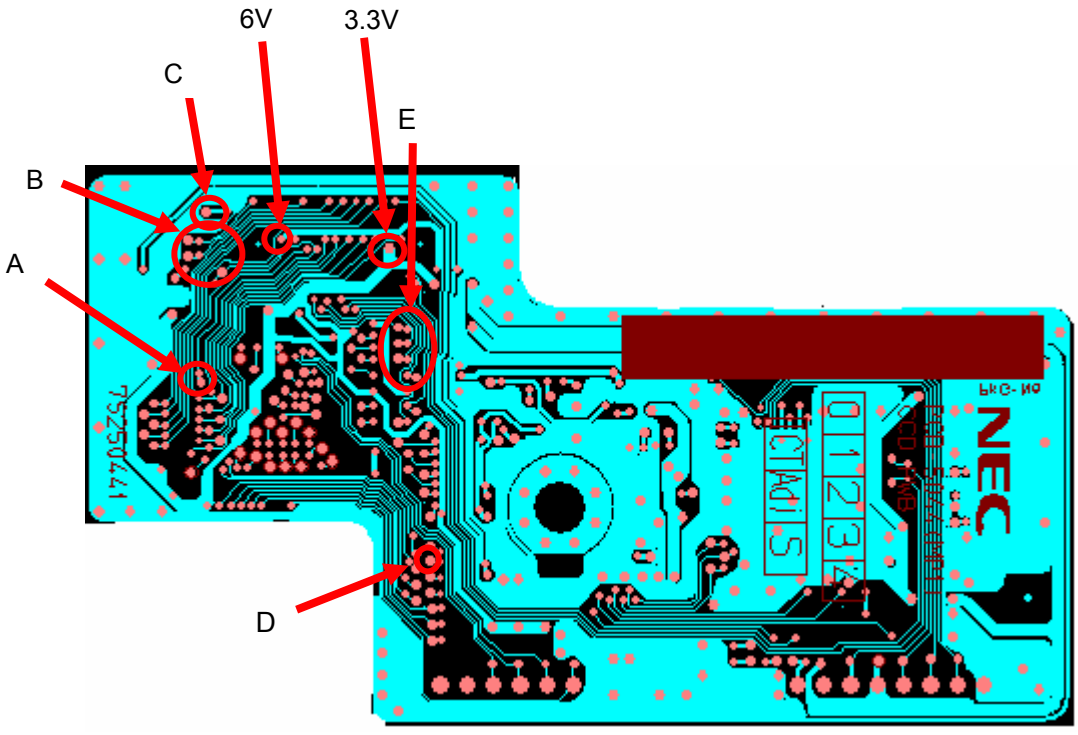
Check point: Check voltage and see whether a change in H/L is present.



Waveform at Point C



NTSC video signal (with gray scale input)



<Fig. 1 CCD PWB Pattern Diagram>

61 Inch Section (PRO-1410HD & PDP614MX)

Page:	Topics Covered:
26	Testing Scan board (Y drive)
27	Testing Scan IC's and Common board (X drive)
28	Testing Data IC's & Digital board fuse
29~30	PC board replacement (screws & connector locations)
31~37	Adjustments
38~41	Disassembly
42~43	Parts List
44~49	Connector pin Voltages and Signals

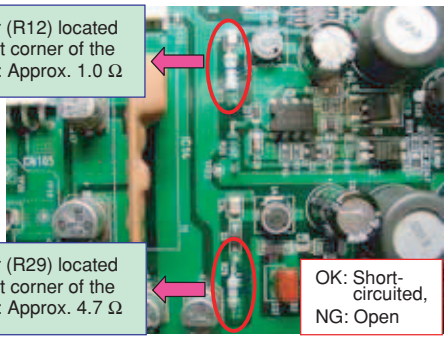
Points of failure diagnosis for a Board Assy (PKG)

The fuses and/or fusible resistors shown in the photos below may be blown by electric surges caused by a failure. In such a case, replace the corresponding PKG.

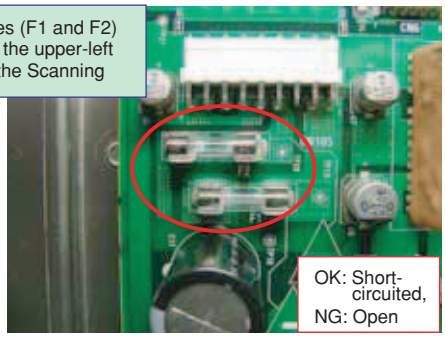
Failure diagnosis of the Scanning Board (Y-Drive)

Fusible resistor (R12) located at the upper-left corner of the Scanning PKG: Approx. 1.0 Ω (1/2 W)

Fusible resistor (R29) located at the upper-left corner of the Scanning PKG: Approx. 4.7 Ω (1/4 W)

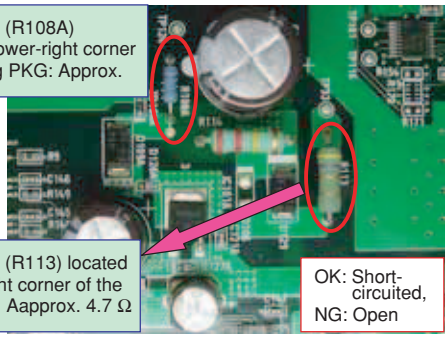


Glass fuses (F1 and F2) located at the upper-left corner of the Scanning PKG

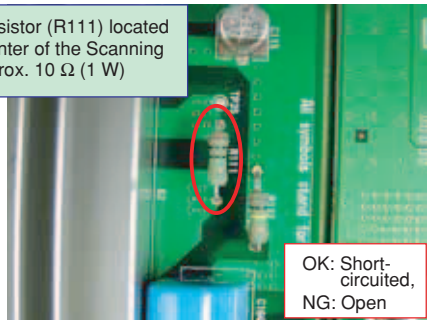


Fusible resistor (R108A) located at the lower-right corner of the Scanning PKG: Approx. 2.2 Ω (1 W)

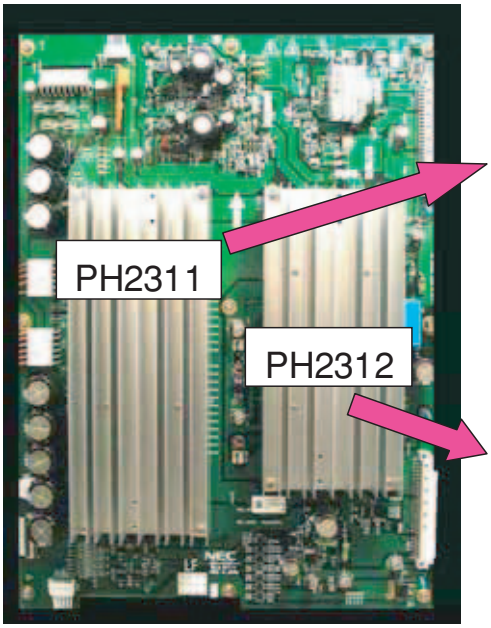
Fusible resistor (R113) located at the lower-right corner of the Scanning PKG: Aapprox. 4.7 Ω (2 W)

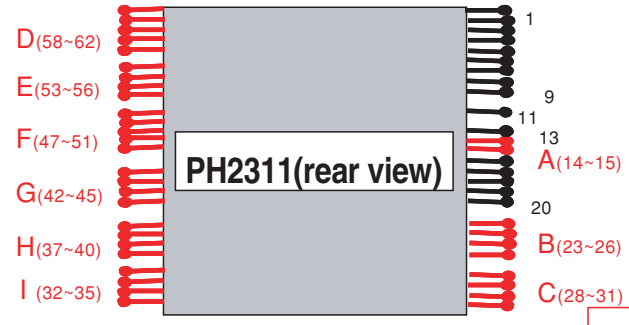


Fusible resistor (R111) located at right center of the Scanning PKG: Approx. 10 Ω (1 W)



Failure diagnosis of the Power IC on the Scanning Board





~~Check points~~

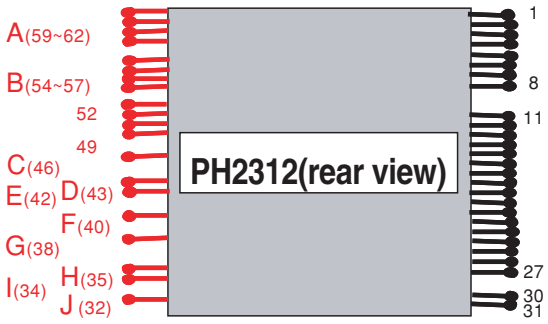
Between A and B
Between B and H

Between C and I

Between D and E
Between F and G

Result:
OK: k Ω or more,
NG: Short-circuited

Note: A, D, and E are ground.



~~Check points~~

Between A and B
Between C and D

Between E and F

Between G and H
Between I and J

~~Result:~~
OK: k Ω or more,
NG: Short-circuited

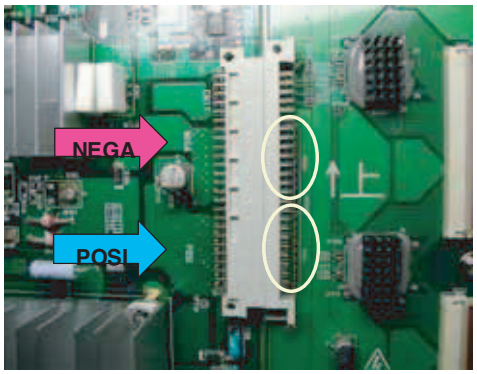
Note: C and G are ground.

Failure diagnosis of the Scanning IC

Check with a tester the resistance value between any pins indicated as NEGA and POSI of the connector in the photos below. If a positive and a negative pin of the connector on the Scanning Relay PKGs are short-circuited and remains short-circuited even after the connectors on the Scanning PKG and Scanning Relay PKG are disconnected, the Scanning IC on the Scanning Relay PKG is in failure.

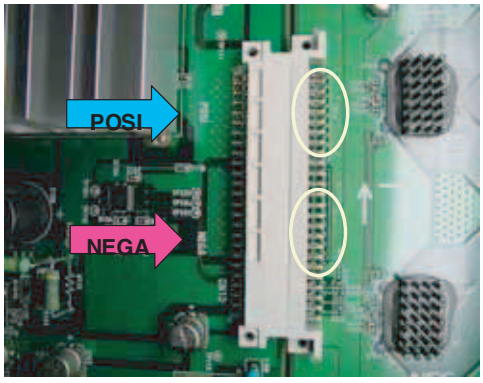
Scanning PKG

Scanning Relay PKG (upper connector)



Scanning PKG

Scanning Relay PKG (lower connector)

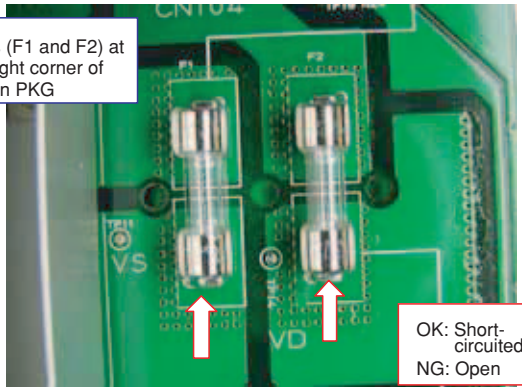


~~Check points~~ Between any pins of NEGA and POSI blocks

OK: k Ω or more,
NG: Short-circuited

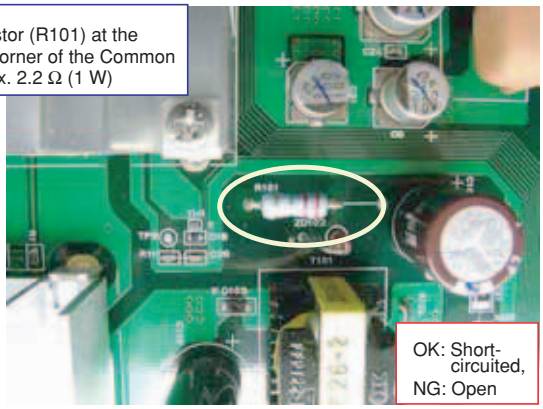
Failure diagnosis of the Common Board (X Drive)

Glass fuses (F1 and F2) at the upper-right corner of the Common PKG



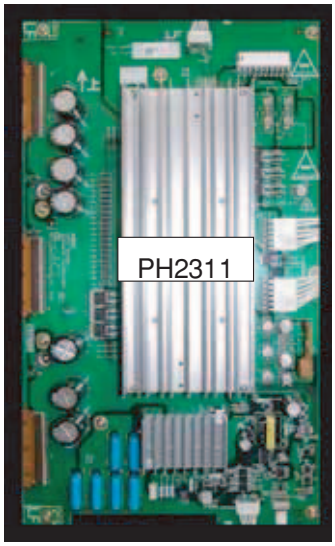
OK: Short-circuited,
NG: Open

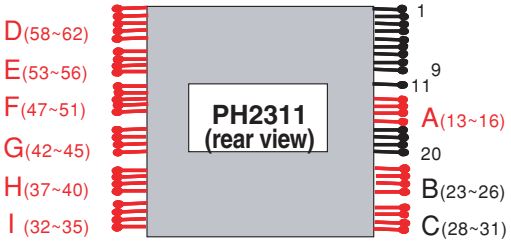
Fusible resistor (R101) at the lower-right corner of the Common PKG: Approx. 2.2 Ω (1 W)



OK: Short-circuited,
NG: Open

Failure diagnosis of the Power HIC on the Common Board





~~Check points~~

Between A and B
Between B and H
Between C and I

Between D and E
Between F and G

~~Result~~:
OK: k Ω or more,
NG: Short-circuited

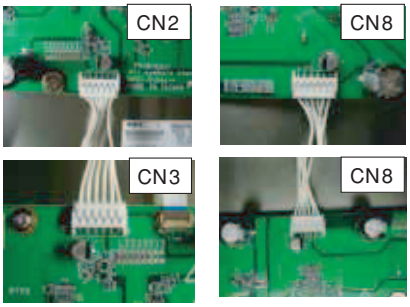
Note: A and D are ground.

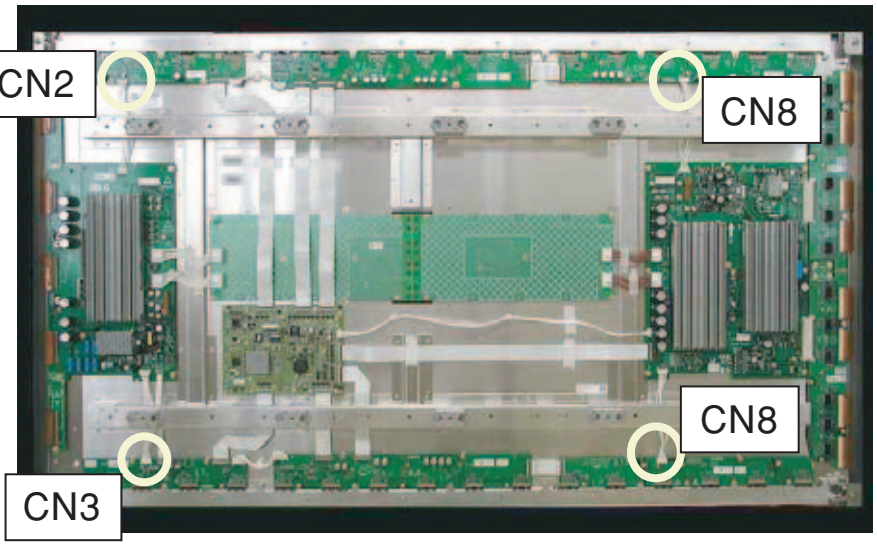
Failure diagnosis of the Data IC

Failure symptom: The image in any block of the screen is not displayed.

Check with a tester between Pin 5 or 6 (Vd line of Data IC) and ground of each Signal Relay PKG.

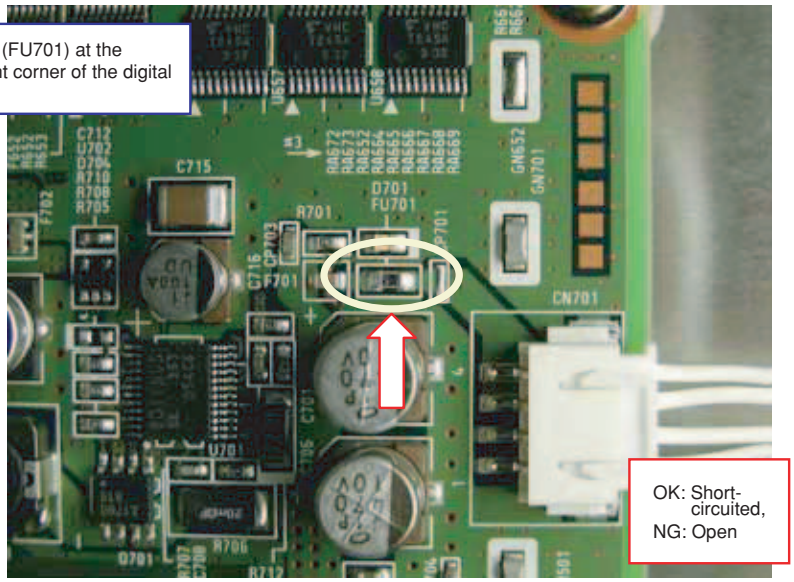
OK: Open
NG: Short-circuited,





Failure diagnosis of the Digital PKG

Chip fuse (FU701) at the upper-right corner of the digital PKG



OK: Short-circuited,
NG: Open

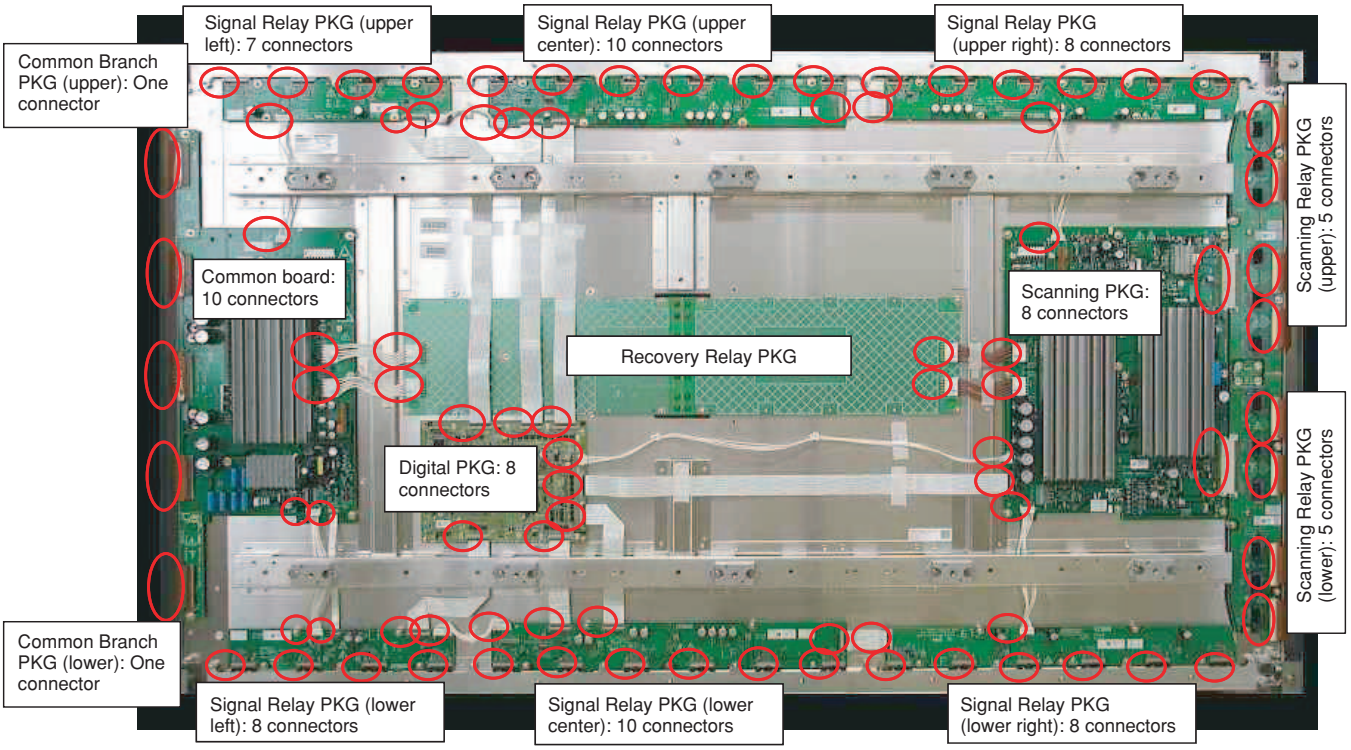
Replacement method for a Board Assy and notes on replacement

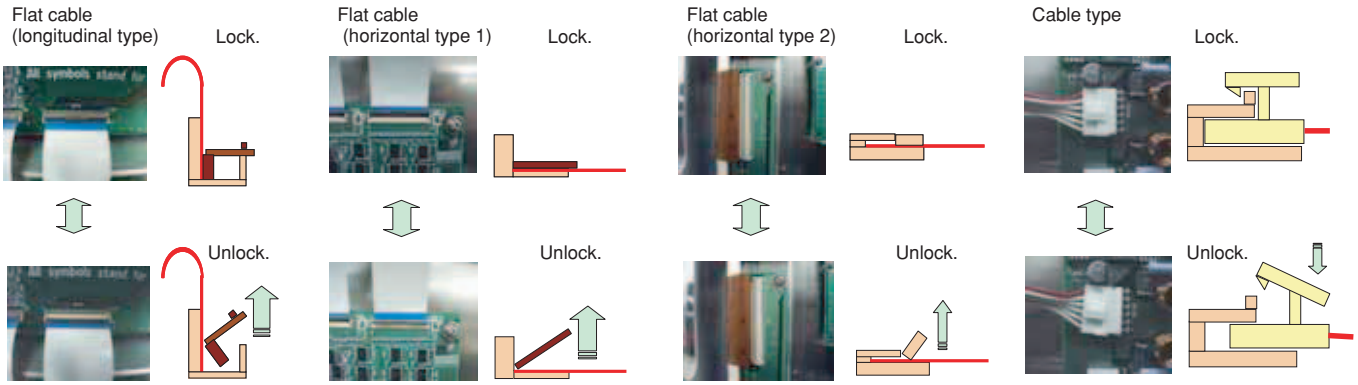
Preparation

Place a cushion on the workbench and set the module to be repaired on it.
Note: With the glass surface facing downward, be sure that the entire glass surface is against the cushion.

Disconnection of connectors and cables

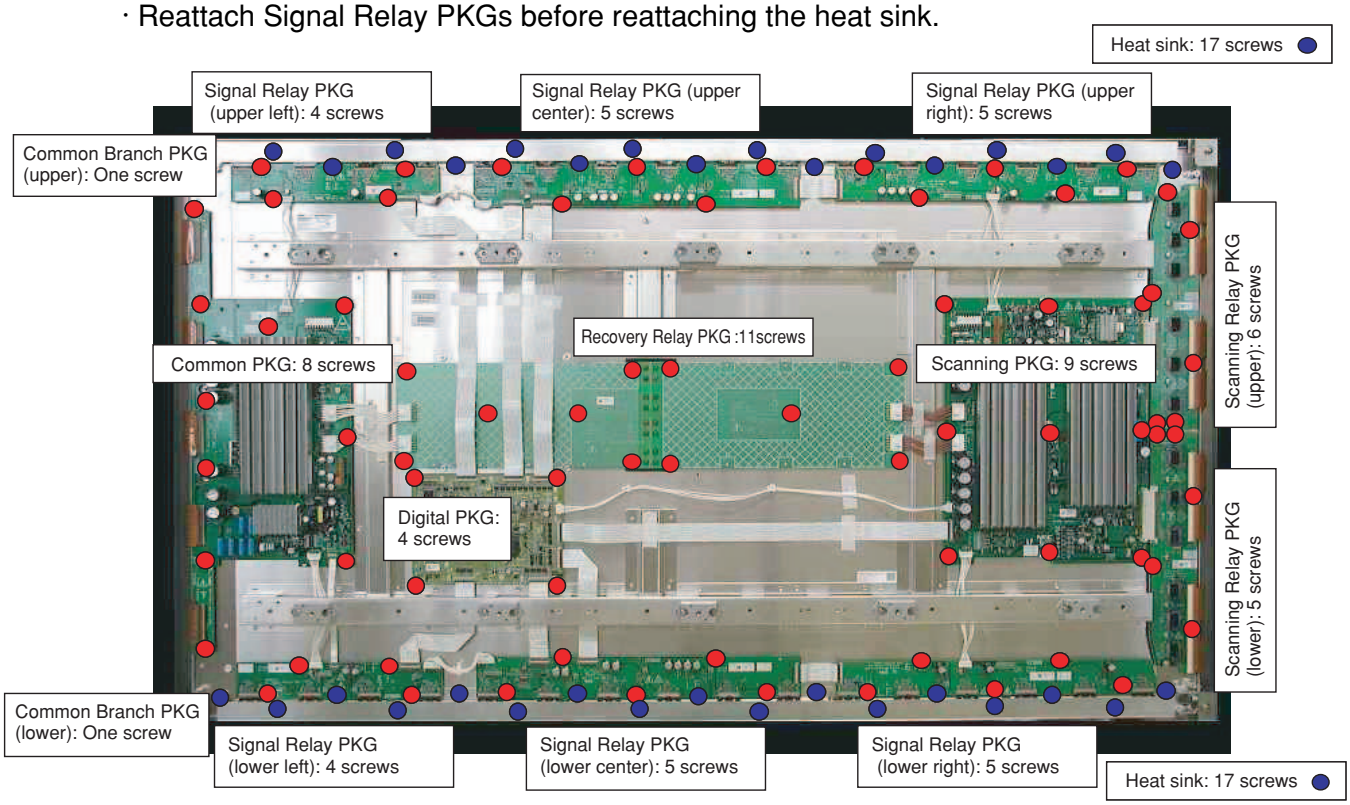
Disconnect all the connectors on the PKG to be repaired.
(When a Signal Relay PKG is to be removed, remove the heat sink beforehand.)


Signal Relay PKG (upper left): 7 connectors
Signal Relay PKG (upper center): 10 connectors
Signal Relay PKG (upper right): 8 connectors
Common Branch PKG (upper): One connector
Scanning Relay PKG (upper): 5 connectors
Common board: 10 connectors
Scanning PKG: 8 connectors
Recovery Relay PKG
Digital PKG: 8 connectors
Scanning Relay PKG (lower): 5 connectors
Common Branch PKG (lower): One connector
Signal Relay PKG (lower left): 8 connectors
Signal Relay PKG (lower center): 10 connectors
Signal Relay PKG (lower right): 8 connectors



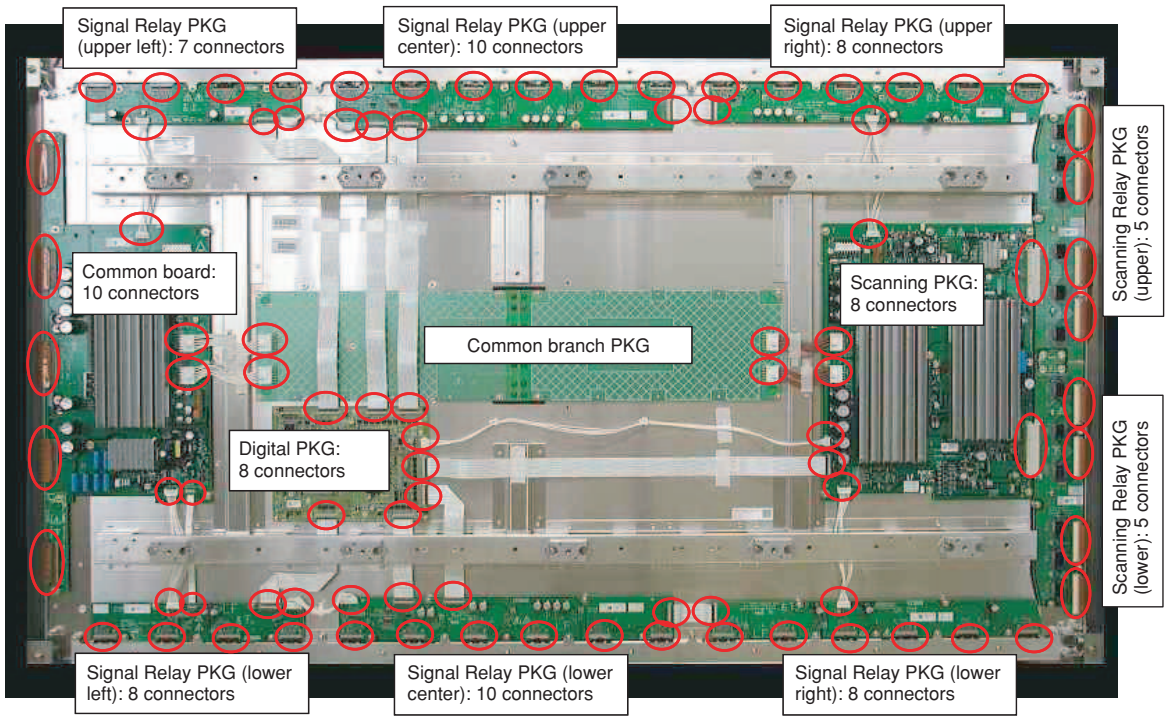
How to remove/reattach the Board Assy (PKGs)

Notes:
- Be sure not to drop a screwdriver or screw on a PKG or a cable.
- When removing/reattaching a screw, be sure not to leave any tiny metal shavings, because they may cause a failure.
- Before removing Signal Relay PKGs, remove the heat sink.
- Be sure not to apply any stress to a PKG, connector, or cable when reattaching them.
- Reattach Signal Relay PKGs before reattaching the heat sink.


Heat sink: 17 screws
Signal Relay PKG (upper left): 4 screws
Signal Relay PKG (upper center): 5 screws
Signal Relay PKG (upper right): 5 screws
Common Branch PKG (upper): One screw
Scanning Relay PKG (upper): 6 screws
Recovery Relay PKG :11screws
Common PKG: 8 screws
Scanning PKG: 9 screws
Digital PKG: 4 screws
Scanning Relay PKG (lower): 5 screws
Common Branch PKG (lower): One screw
Signal Relay PKG (lower left): 4 screws
Signal Relay PKG (lower center): 5 screws
Signal Relay PKG (lower right): 5 screws
Heat sink: 17 screws

Confirmation of connector connection

Check whether or not the connectors indicated by circles are correctly connected.


Signal Relay PKG (upper left): 7 connectors
Signal Relay PKG (upper center): 10 connectors
Signal Relay PKG (upper right): 8 connectors
Scanning Relay PKG (upper): 5 connectors
Common board: 10 connectors
Scanning PKG: 8 connectors
Common branch PKG
Digital PKG: 8 connectors
Scanning Relay PKG (lower): 5 connectors
Signal Relay PKG (lower left): 8 connectors
Signal Relay PKG (lower center): 10 connectors
Signal Relay PKG (lower right): 8 connectors

■Adjusting conditions

Adjustments should be carried out in the procedures of A to C specified below. However, any adjustments other than the items A to C below are not required.

A. When the "PDP module (PDP-NP61C2MF01)" is replaced, adjustments should conform to the adjusting items of [1 and 2] specified below.

B. When the "POWER UNIT" is replaced, adjustments should conform to the adjusting item of [2] specified below.

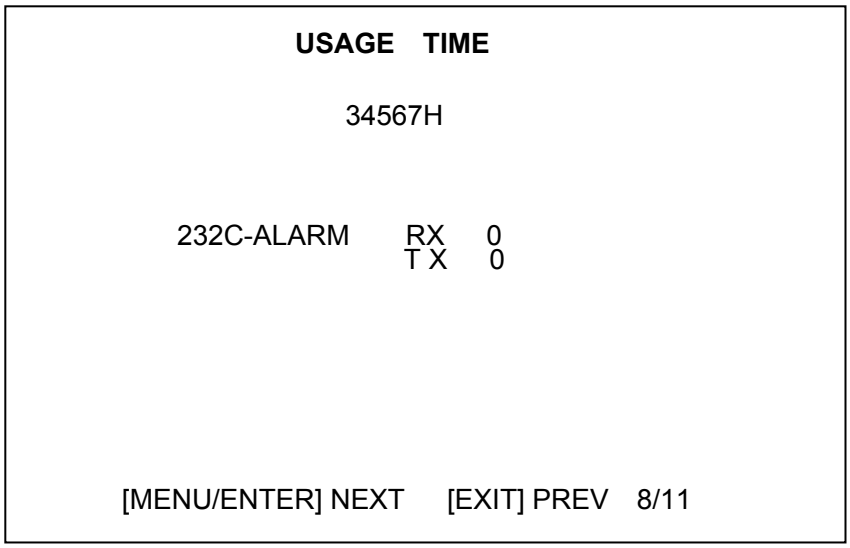
C. When the "MAIN PWB" is replaced, adjustments should conform to the adjusting item of [3] specified below.

■Adjusting items

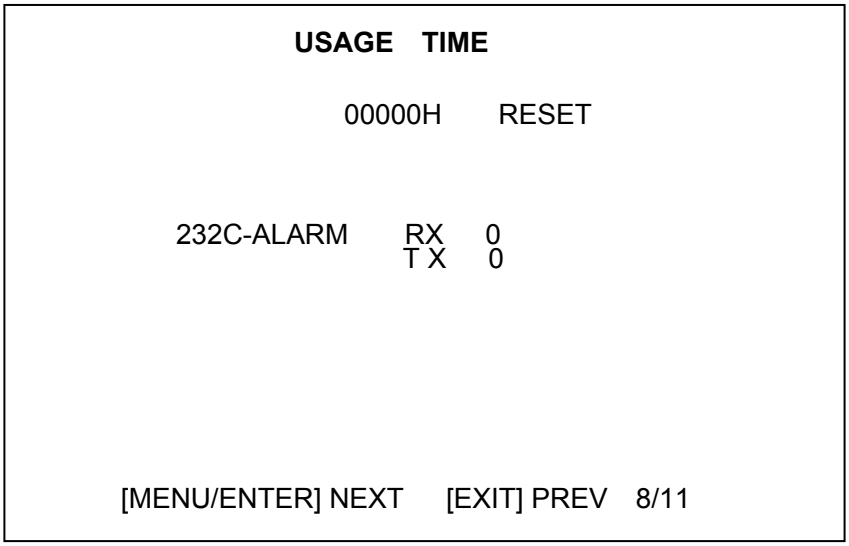
1. Clearing of the usage time (Using the remote control)

(1) Press the keys in the order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] in order to enter the factory adjustment menu.

(2) Press the [MENU/ENTER] key to select the [USAGE TIME] menu (8/11). Then, the integrated time [34567 (hours)] (example) accumulated till the present time is displayed when the main power supply is turned on (except for the standby mode).



(3) When the keys are pressed in the order of [MUTE] → POSITION/CONTROL [▲] → POSITION/CONTROL [▼] → [OFF TIMER], the display is cleared to [00000H]. At that time, the characters of [RESET] are displayed for about 5 seconds on the right side of time display.



2. Adjustment of the power unit (Using a screwdriver for general-purpose adjustments)

2-1. Adjustment of the Vs voltage

(1) Enter a color bar input by means of either video signal of VIDEO input, or DVD/HD input, or RGB input, and turn on the power switch of the main unit.

(2) Turn the volume control (RV6) in the power unit and make adjustments until the voltages of CH2 and CH1 (D, GND) of the power unit attain the voltage values specified for the PDP (Vs value of the voltage regulation indicator label on below the figure) ±1V.

2-2. Adjustment of the Vd voltage

(1) Enter a color bar input by means of either video signal of VIDEO input, or DVD/HD input, or RGB input, and turn on the power switch of the main unit.

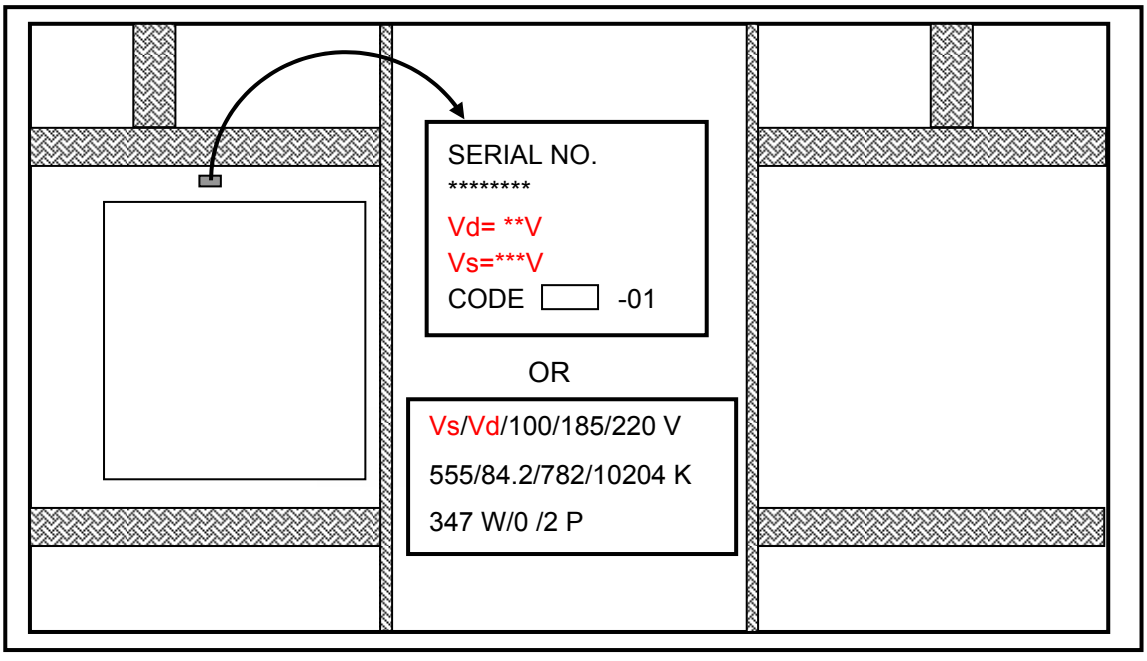
(2) Confirm that the voltages of CH4 and CH1 (D, GND) of the power unit are maintained at the voltage values specified for the PDP (Vd value of the voltage regulation indicator label on below the figure) ±1V.

Otherwise, turn the volume control (RV5) until the voltage attains the voltage values specified for the PDP (Vd value of the voltage regulation indicator label on below the figure) ±1V.

2-3. Adjustment of the +5V voltage

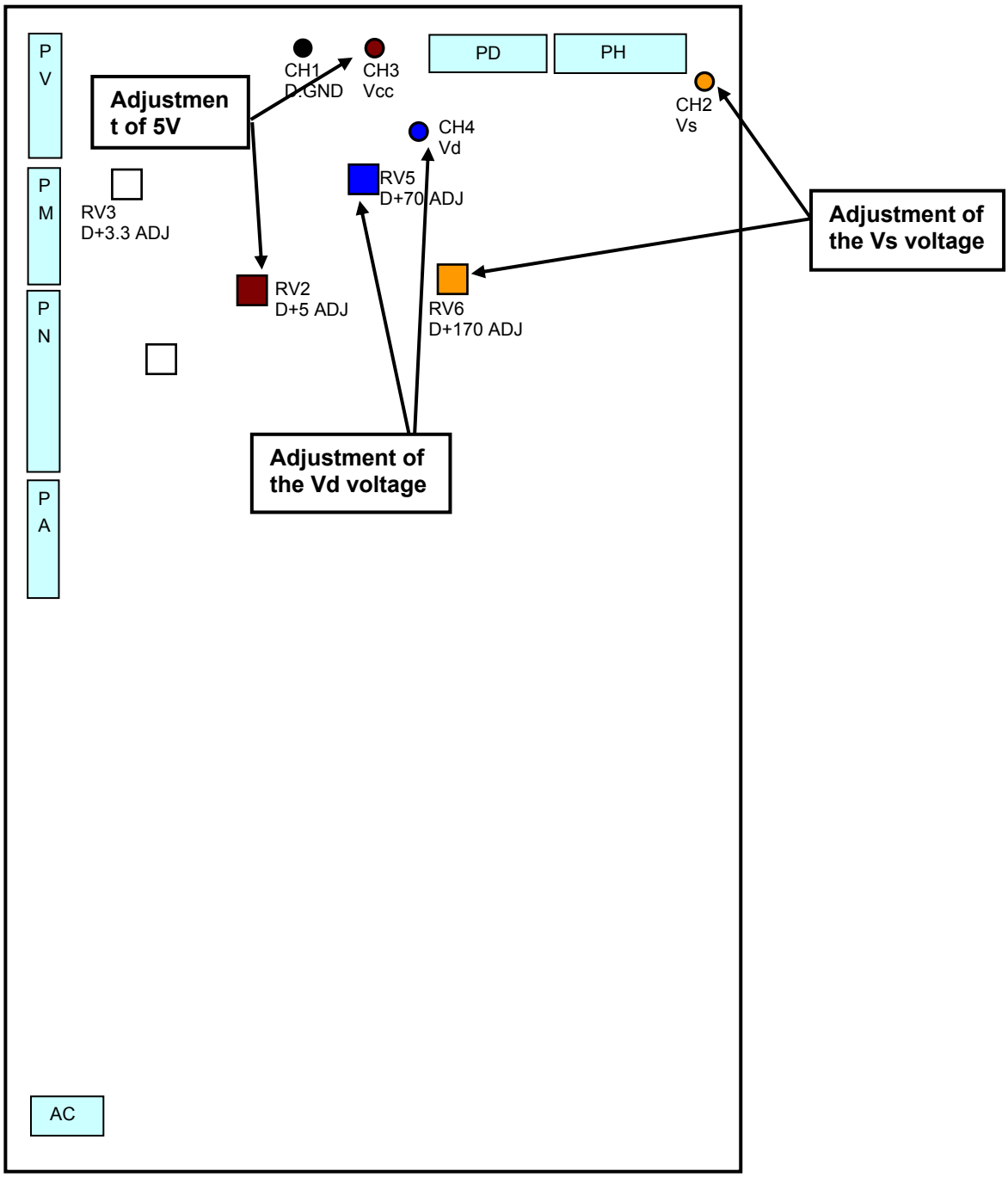
(1) Display a color bar by means of either video signal of VIDEO input, or DVD/HD input, or RGB input.

(2) Confirm that the voltages of CH3 and CH1 (D, GND) of the power unit are maintained at "5.15 ± 0.1V". Otherwise, turn the volume control (RV2) until the voltage attains "5.15 ± 0.1V".



(Caution) Rear-side view when the back cover is removed The label is concealed between the MAIN PWB and PDP. Check it by peeping through the space from above. The label position can be changed, without notice.

*** Top view of the power unit (Adjustment VR location)**

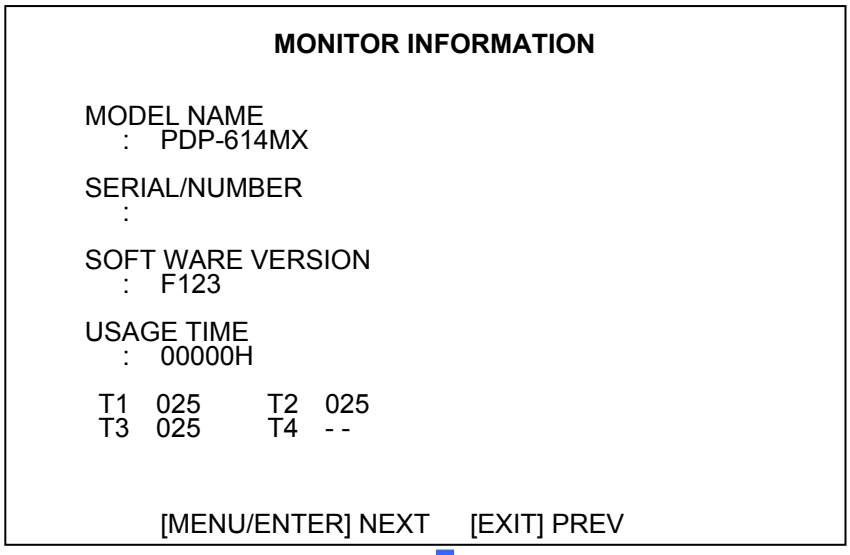


3. Adjustments after the replacement of the MAIN PWB (Using the remote control)

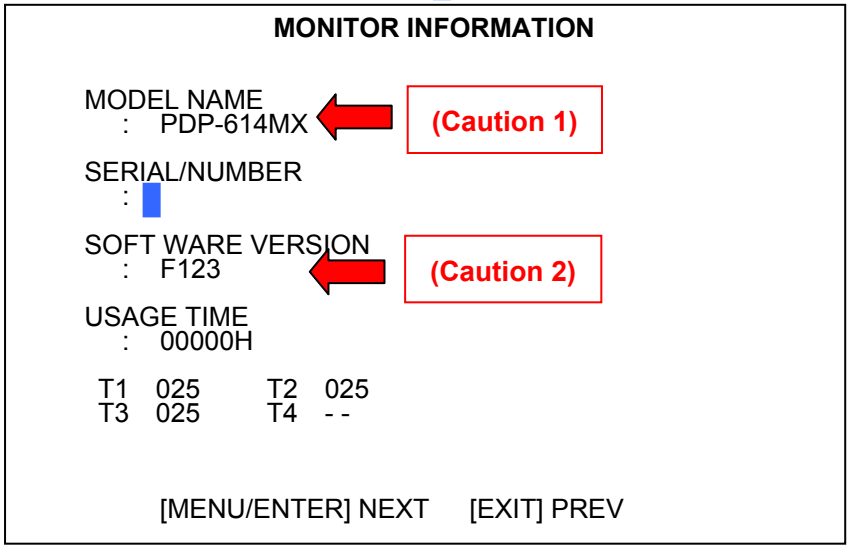
3-1. Product serial No. registration

(1) Press the keys in the order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] in order to enter the factory adjustment menu.

(2) Press the [MENU/ENTER] key to select the [MONITOR INFORMATION] No. menu. (Example : PDP -614MX)



(3) Press the [WIDE] key 4 times to display a cursor ▮ in the lower column of [SERIAL/NUMBER].



(Caution 1) No modification is possible here because this modification is already finished by 3-2. Factory shipment setting (initial setting).

(Caution 2) No modification is possible here because registration is already finished at the time of shipment in terms of maintenance parts.

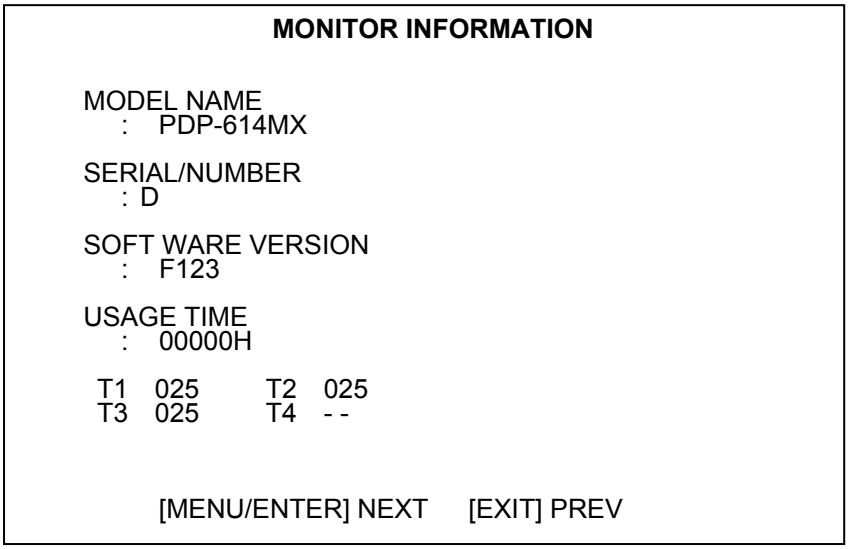
(4) Moving the POSITION/CONTROL keys of [▲] and [▼], select the numerals and characters of the serial number that is listed in the serial label located on the rear surface of the product. Register the serial number. (Blank → 0 ~ 9 → A ~ Z)

(5) Moving the POSITION/CONTROL keys of [◀] and [▶], select the next digit by means of a cursor.

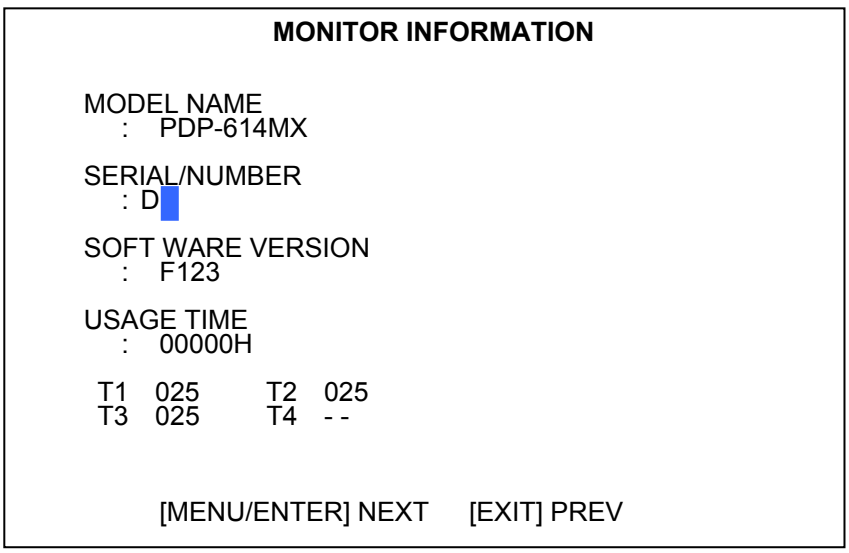
(6) Repeat the processes of (4) and (5) above and register the serial number completely.

(Example) When entering a serial number of [DISS00001XX]

① Move the POSITION/CONTROL keys of [▲] and [▼] to select [2].



② Move the POSITION/CONTROL keys of [◀] and [▶] to select the next digit.



③ Repeat the procedures of ① and ② above, and enter all inputs of [DISS00001XX] from the left side.

MONITOR INFORMATION

MODEL NAME
: PDP-614MX

SERIAL/NUMBER
: DISS00001XX

SOFT WARE VERSION
: F123

T1 025 T2 025
T3 025 T4 - -

[MENU/ENTER] NEXT [EXIT] PREV

(7) Following the above, setting must be carried out without fail according to "3-2. Factory shipment setting (Initial setting)"

3-2.Factory shipment setting (Initial setting)

(1) Press the [MENU/ENTER] ke to select the [FUNCTION] menu.

(2) Move the POSITION/CONTROL keys of [▲] and [▼] to the item of [SHIP]. Then, move the POSITION/CONTROL keys of [◀] and [▶] to select [DESTINATION ALPHABETS] shown below. (The asterisks * shown below denote the numerals or the characters.)

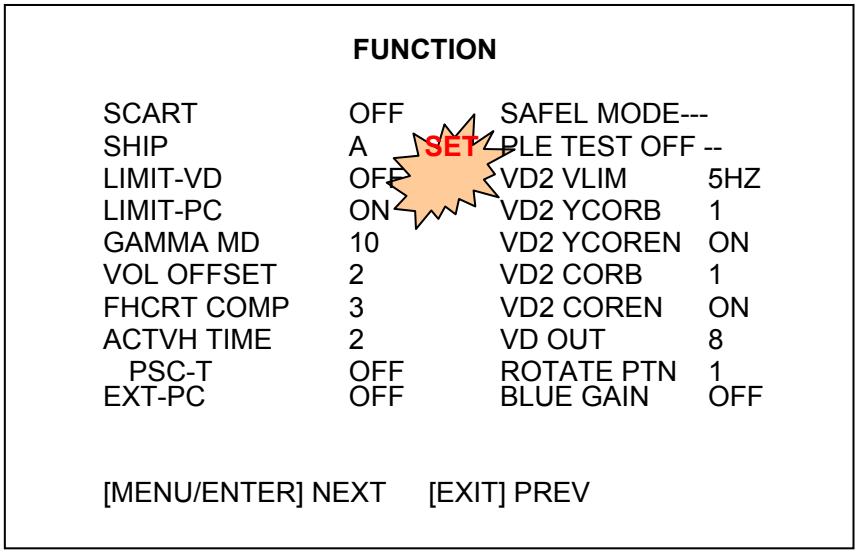
J	: PDP-615PRO	: Specifications for use in Japan
A	: PDP-614MX / PRO-1410HD	: Specifications for North America
G	: PDP-615EX	: Specifications for European countries

FUNCTION

SCART	OFF	SAFEL MODE	---
SHIP	A	PLE TEST	OFF --
LIMIT-VD	OFF	VD2 VLIM	5HZ
LIMIT-PC	ON	VD2 YCORB	--
GAMMA MD	12	VD2 YCOREN	ON
VOL OFFSET	2	VD2 CORB	--
FHCRT COMP	3	VD2 COREN	ON
ACTVH TIME	2	VD OUT	10
PSC-T	OFF	ROTATE PTN	1
EXT-PC	OFF	BLUE GAIN	OFF

[MENU/ENTER] NEXT [EXIT] PREV

(3) Press the keys in the order of [MUTE] → POSITION/CONTROL [▲] → POSITION/CONTROL [▼] → [OFF TIMER] to make "Factory shipment setting". When "Factory shipment setting" is executed, the red characters of [SET] is shown for about 5 seconds on the right side of the [DESTINATION ALPHABETS]. The setting is finished when these red characters of [SET] go out. In regard to the factory shipment setting values, refer to the descriptions given below.



(4) Press the keys of the remote control in the order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] in order to withdraw from the Factory shipment setting.

[Factory shipment setting values]

1. Initial setting values for the user menu

MENU	A,AW,G,GW,W,WW	J,JW
POWER ON/OFF	ON	ON
VOLUME	10step	10step
INPUT MODE	VIDEO1	VIDEO1
WIDE MODE	STADIUM	STADIUM
AUTO PICTURE	OFF (RGB1~3)	OFF (RGB1~3)
HD SELECT	1080B *	1080B
LANGUAGE	ENGLISH	JAPANEASE
COLOR SYSTEM	AUTO	AUTO
All items intended to recover the initial values through the selection of [All Reset] in the user menu	Initial values	Initial values

* 1080I for *PX-***R**

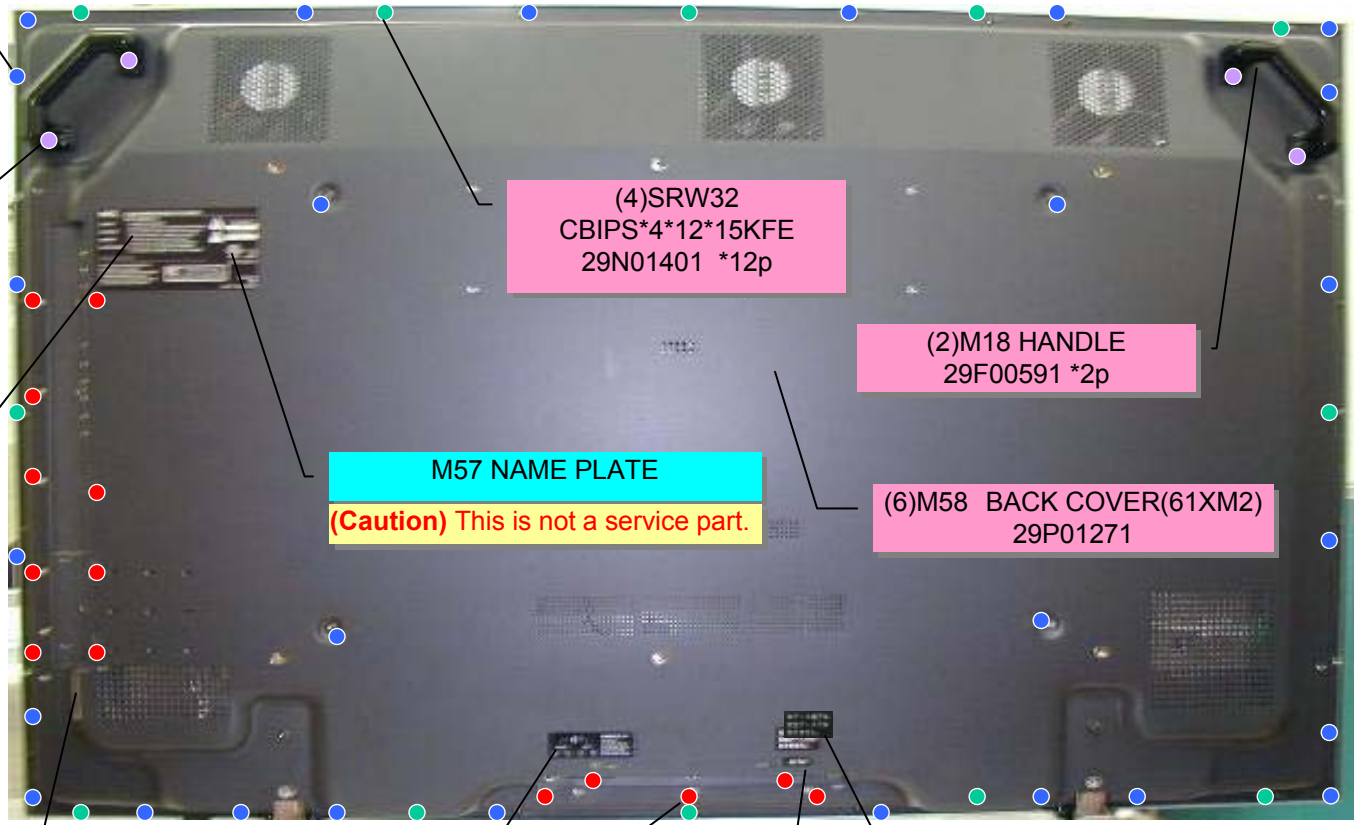
2. Field menu initial setup values (applicable in common to all models)

MENU		A	G	W	J	AW,GW, WW,JW
SERVICE	SHIP	A	G	W	J	AW,GW, WW,JW
	PSC-LIMIT	OFF	OFF	OFF	OFF	OFF
	LIMIT-PC	ON	ON	ON	ON	ON
	U-SCAN	OFF	OFF	OFF	OFF	OFF
	V-FREQ OT	AUTO	60Hz	60Hz	AUTO	AUTO
	V-FREQ VD	AUTO	60Hz	60Hz	AUTO	AUTO
	SYNCLEVEL1	TTL	TTL	TTL	TTL	TTL
	SYNCLEVEL2	TTL	TTL	TTL	TTL	TTL
	SUB-ORB *1	ON	ON	ON	ON	ON
	PIC FREEZE *1	ON	ON	ON	ON	ON
MONITOR INFORMATION	LOCATION	USA	Europe	other	Japan	*2

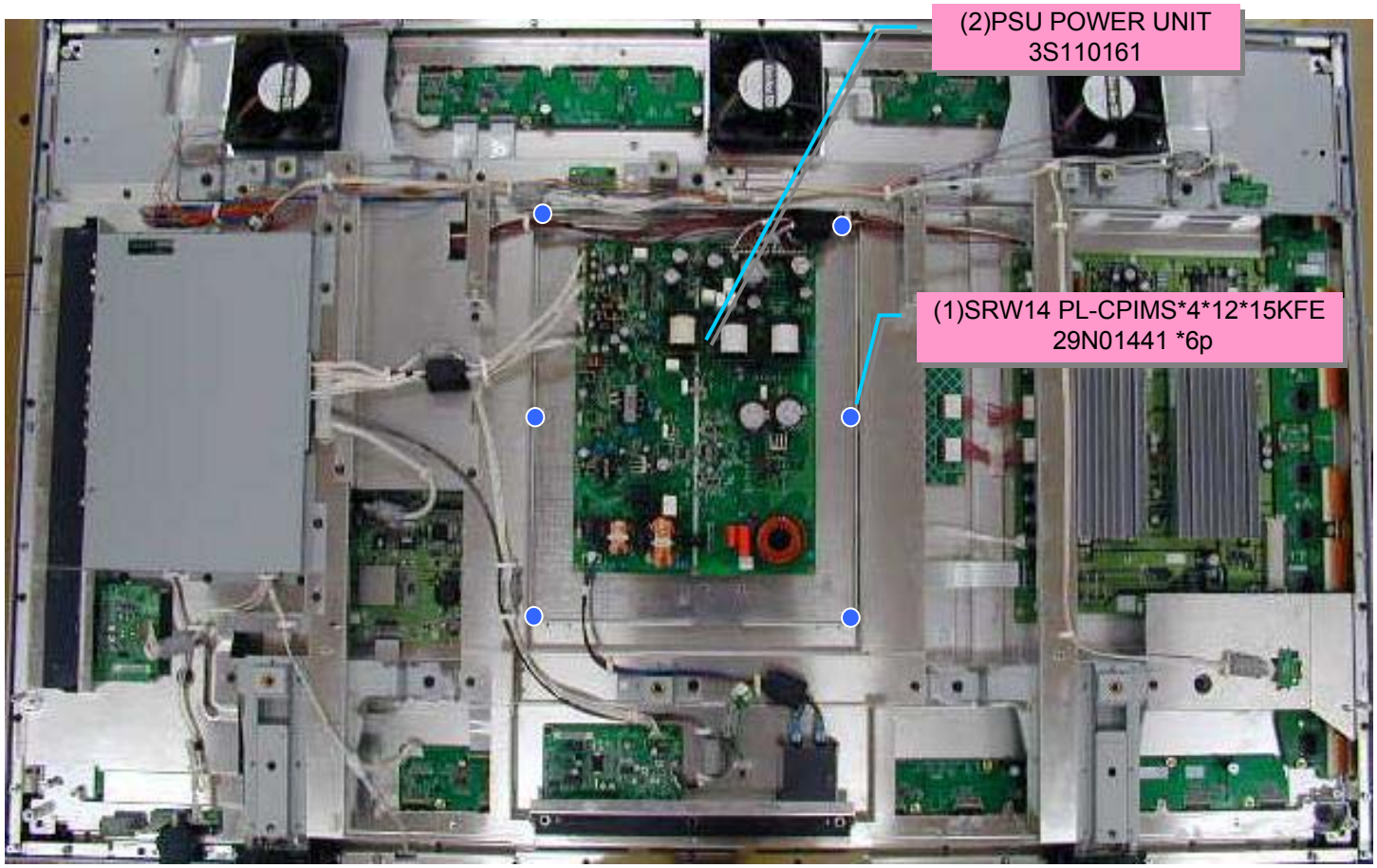
*1:PX-50XM4/50XR4,PX-61XM3/61XR3 Selies only.

*2:Monitor information when SHIP is for AW, GW, WW, JW setup

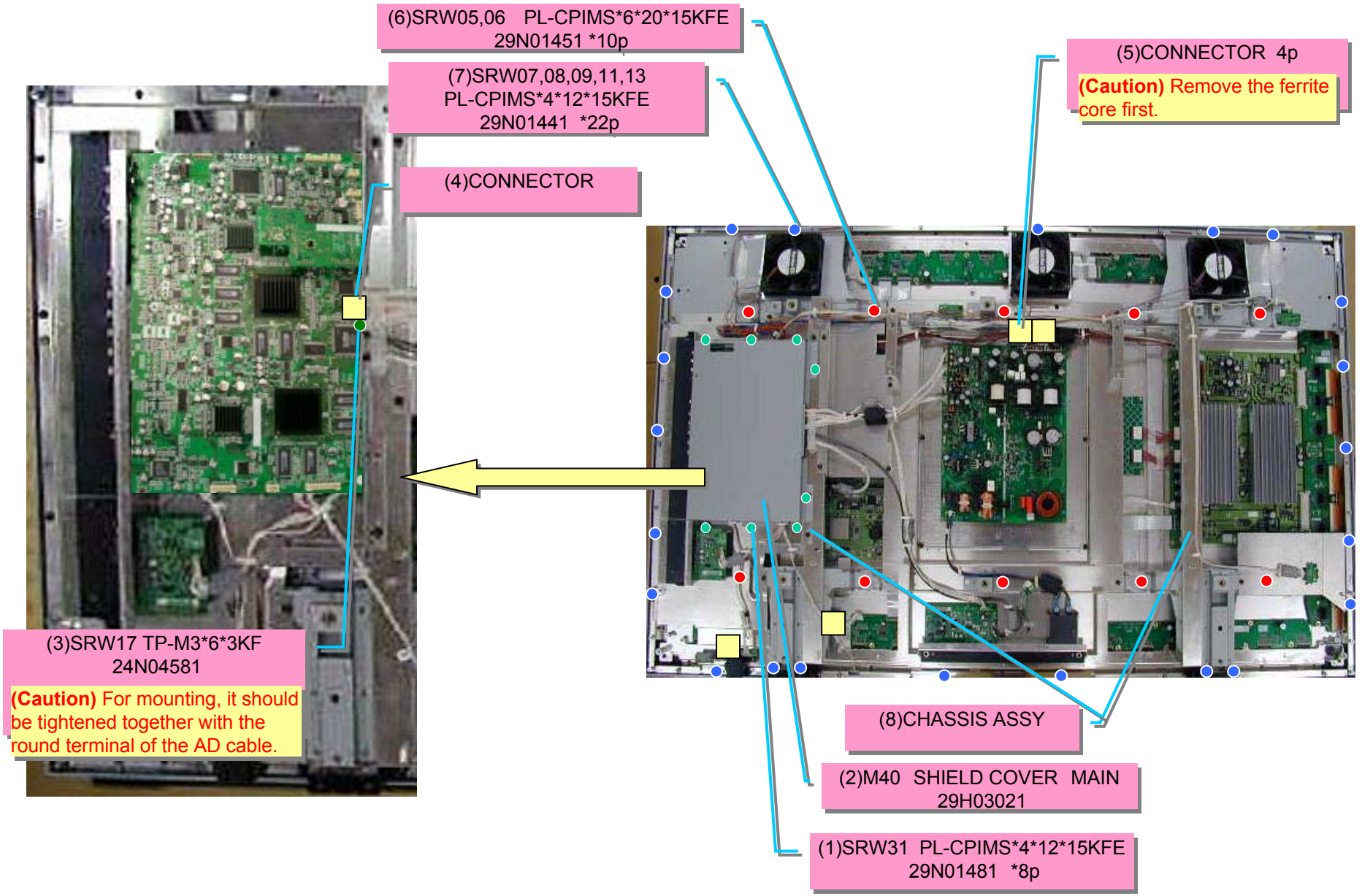
Removing the BACK COVER



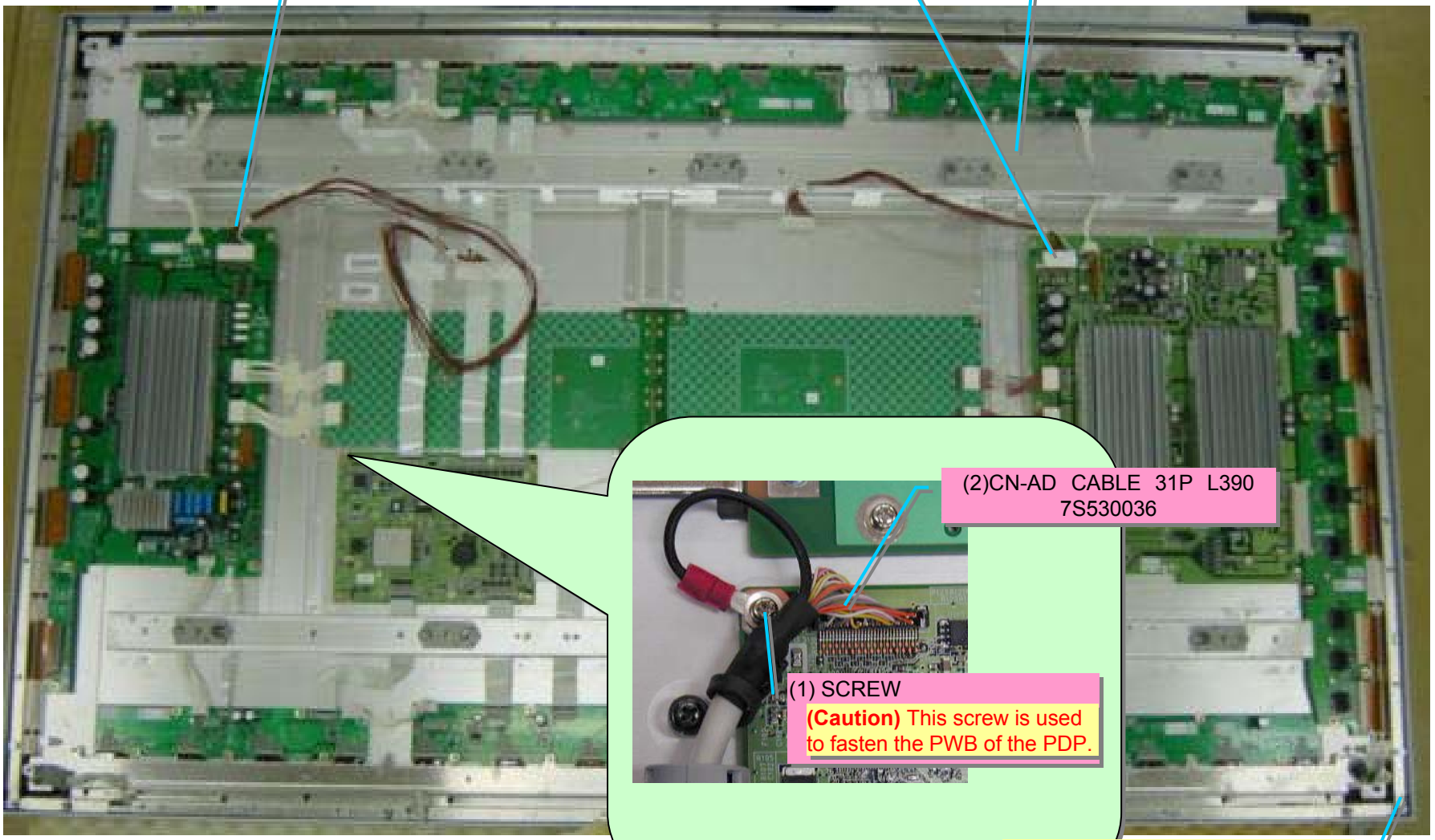
Removing the POWER UNIT



Removing the upper CHASSIS ASSY



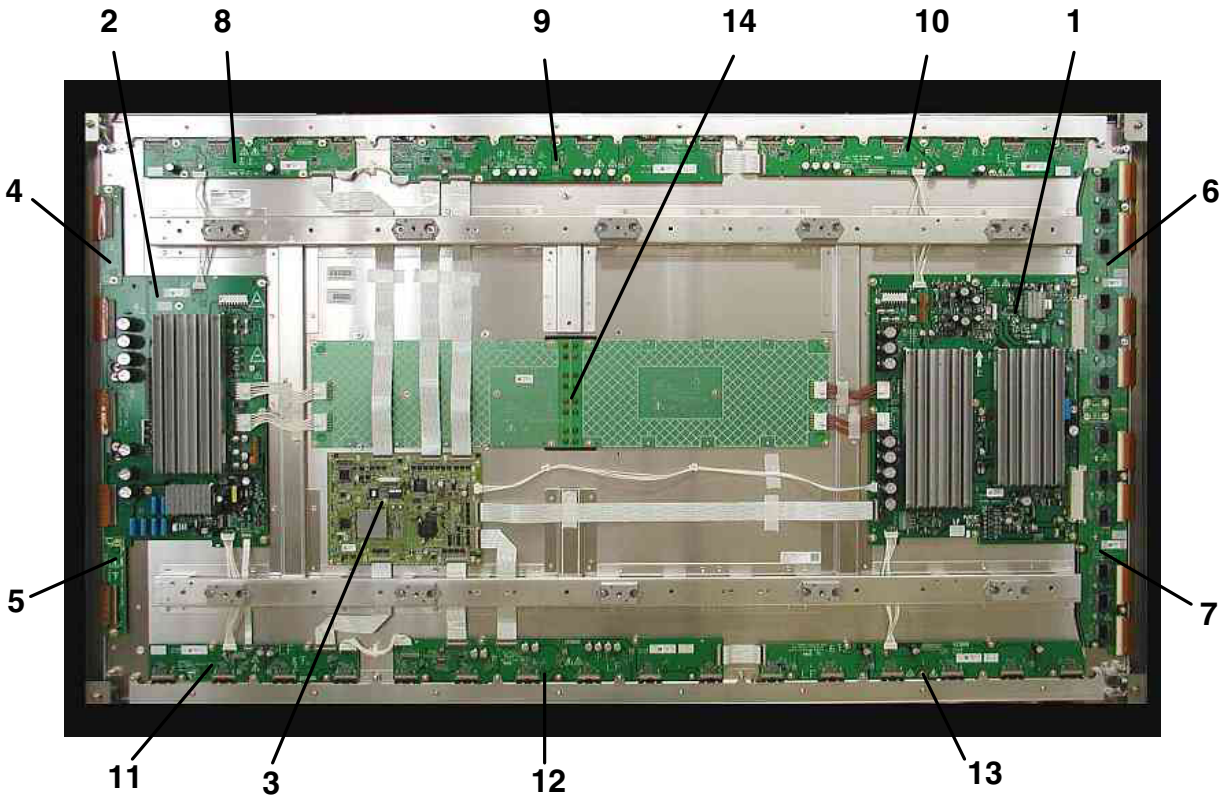
PDP Panel Assembly



PDP MODULE

PARTS LIST (61 Inch Models)					
	PART NAME		PART No.	Qty	NOTE
	NAME	VER *1			
1	PKG61C2F1	02C	9S899790	1	Scanning PKG
2	PKG61C2G1	02A	9S899669	1	Common PKG
3	PKG61C2C1	05C-27	9S899791	1	Digital PKG
	PKG61C2C1	05D-27	9S899731	1	Cf. interchangeability list
	PKG61C2C1	05C-28	9S899792	1	
	PKG61C2C1	05D-28	9S899793	1	
4	PKG61C2G2	02A	9S899670	1	Common Branch PKG (upper)
5	PKG61C2G3	02A	9S899671	1	Common Branch PKG (lower)
6	PKG61C2E1	02B	9S899660	1	Scanning Relay PKG (upper)
7	PKG61C2E2	02B	9S899661	1	Scanning Relay PKG (lower)
8	PKG61C2J1	01B	9S899583	1	Signal Relay PKG (upper left)
9	PKG61C2J2	01B	9S899584	1	Signal Relay PKG (upper center)
10	PKG61C2J3	01B	9S899585	1	Signal Relay PKG (upper right)
11	PKG61C2J4	01B	9S899586	1	Signal Relay PKG (lower left)
12	PKG61C2J5	01B	9S899587	1	Signal Relay PKG (lower center)
13	PKG61C2J6	01B	9S899588	1	Signal Relay PKG (lower right)
14	PKG61C2J7	01A	9S899589	1	Recovery Relay PKG

*1 : Version number of the Board Assy (PKG) is written down in the Board Assy itself.



Board ASSY interchangeability list 61 Inch Models)

Note: In the Board ASSY (PKG) replacement, You can exchange it in a version of high rank than a replacement target version besides a compatible version.
Digital PKG follows the following list, and exchange it.

Digital PKG PKG61C2C1	Replacement Target Version	Compatible Version
	01A - 00, 01, 02, 03 01B - 03, 05, 07, 11 02A - 03, 02B - 03, 05, 07, 11 02C - 10, 17, 21 03B - 13, 15, 25 03C - 23, 25, 27 04C - 23, 25, 27 04D - 25, 27 05C - 25, 27 05D - 25, 27	Exchange it for 05C-27 (9S899791) or 05D-27 (9S899731).
	01B - 04, 06, 08, 12 02B - 04, 06, 08, 12 02C - 18, 22 03B - 14, 16 03C - 24, 28 04C - 24, 26, 28 04D - 26, 28 05C - 26, 28 05D - 26, 28	Exchange it for 05C-28 (9S899792) or 05D-28 (9S899793).

CONNECTOR PIN EXPLANATION

PDP-614MX & PRO-1410HD

(Caution) The operating voltages specified below are used in common irrespective of the presence of signals. In this case, however, part of the operating voltages (red characters) may change according to the signal conditions when the main power supply is turned on (POWER button ON).

Status of LED lighting: ★ for lighting in green, ★★ for unlighting, and ★★★ for lighting in red.

Vol.1

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
PN	1	D+3.3	3.3V power supply for digital circuits		0	3.3	3.3	0	0	0	-	POWER→MAIN
	2	D+3.3	3.3V power supply for digital circuits		0	3.3	3.3	0	0	0	-	POWER→MAIN
	3	D+3.3	3.3V power supply for digital circuits		0	3.3	3.3	0	0	0	-	POWER→MAIN
	4	D.GND	GND		0	0	0	0	0	0	-	-
	5	D.GND	GND		0	0	0	0	0	0	-	-
	6	D.GND	GND		0	0	0	0	0	0	-	-
	7	D+2.5	2.5V power supply for digital circuits		0	2.5	2.5	0	0	0	-	POWER→MAIN
	8	D+2.5	2.5V power supply for digital circuits		0	2.5	2.5	0	0	0	-	POWER→MAIN
	9	D+2.5	2.5V power supply for digital circuits		0	2.5	2.5	0	0	0	-	POWER→MAIN
	10	D.GND	GND		0	0	0	0	0	0	-	-
	11	D.GND	GND		0	0	0	0	0	0	-	-
	12	D.GND	GND		0	0	0	0	0	0	-	-
PM	1	M+7	7V power supply for microcomputer		6.8	6.8	6.8	6.8	6.8	6.8	-	POWER→MAIN
	2	D.GND	GND		0	0	0	0	0	0	-	-
	3	POWER	Power control		0	4.9	4.9	0	0	0	-	MAIN→POWER
	4	D.GND	GND		0	0	0	0	0	0	-	-
	5	POMUTE	Mute signal for AC power OFF		4.8	4.8	4.8	4.8	4.8	4.8	4.8→-	POWER→MAIN
	6	SW7	Power start control		0	6.8	6.8	6.8	6.8	0	-	POWER→MAIN
	7	N C	Non-connection terminal		-	-	-	-	-	-	-	-
PV	1	A+12	12V power supply for analog circuits		0	12	12	0	0	0	-	POWER→MAIN
	2	A.GND	GND		0	0	0	0	0	0	-	-
	3	A+6	6V power supply for analog circuits		0	6	6	0	0	0	-	POWER→MAIN
	4	A+6	6V power supply for analog circuits		0	6	6	0	0	0	-	POWER→MAIN
	5	A.GND	GND		0	0	0	0	0	0	-	-
	6	A.GND	GND		0	0	0	0	0	0	-	-
	7	NC	Non-connection terminal		-	-	-	-	-	-	-	-
	8	NC	Non-connection terminal		-	-	-	-	-	-	-	-
AU	1	AU_L	Audio signal L CH		0	Selected input signals are output.	Selected input signals are output.	0	0	0	-	MAIN→AUDIO
	2	GND	GND		0	0	0	0	0	0	-	-
	3	AU_R	Audio signal R CH		0	Selected input signals are output.	Selected input signals are output.	0	0	0	-	MAIN→AUDIO
	4	GND	GND		0	0	0	0	0	0	-	-
	5	MUTE	Mute signal of audio output		3.5	3.5→0	3.5→0	3.5	3.5→0	3.5	3.5→-	MAIN→AUDIO
	6	SCL7	Clock line of the I2C bus		0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	0	0	0	-	MAIN→AUDIO
	7	SDA7	Data line of the I2C bus		0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	1	1	0	-	MAIN→AUDIO
RS	1	M+5V	5V power supply for microcomputer		0	5	5	5	5	0	-	MAIN→RS232C
	2	TXD	RS232 driver output		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	0	-	MAIN→RS232C
	3	GND	GND		0	0	0	0	0	0	-	-
	4	RXD	RS232 receiver input		0	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	0	-	RS232C→MAIN
	5	M+3.3V	3.3V power supply for microcomputer		0	3.3	3.3	3.3	3.3	0	-	MAIN→RS232C
	6	GND	GND		0	0	0	0	0	0	-	-
	7	REMIN2/RXD 1	Data signal of wired remote control	42VM5 42VP5 42XM3 50XM4 61XM3	0	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	0	-	RS232C→MAIN
				42VR5 42XR3 50XR4 61XR3	0	0	0	0	0	0	-	
	8	RESET SW	NC		-	-	-	-	-	-	-	-
	9	PLE_CTL	PLE control	42VM5 42VP5 42XM3 50XM4 61XM3	0	3.3V duning data transmission for Video WOLL 0V when no data are transmitted	3.3V duning data transmission for Video WOLL 0V when no data are transmitted	3.3V duning data transmission for Video WOLL 0V when no data are transmitted	0	0	-	MAIN→RS232C
				42VR5 42XR3 50XR4 61XR3	0	0	0	0	0	0	-	
	10	TXD1	RS232 driver output	42VM5 42VP5 42XM3 50XM4 61XM3	0	Clock signal used during data transmission (5Vac) 5Vdc when no data are transmitted.	Clock signal used during data transmission (5Vac) 5Vdc when no data are transmitted.	Clock signal used during data transmission (5Vac) 5Vdc when no data are transmitted.	0	0	-	MAIN→RS232C

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
				42VR5 42XR3 50XR4 61XR3	0	0	0	0	0	0	-	
	11	232C_SHUT	ON/OFF control for TXD0 driver		0	3.3	3.3	3.3	3.3	0	-	MAIN→RS232C
	12	REM	Insertion detection for wired remote control input	42VM5 42VP5 42XM3 50XM4 61XM3	0	3.3V when a wired remote control is connected/ When not connected.	3.3V when a wired remote control is connected/ When not connected.	3.3V when a wired remote control is connected/ When not connected.	3.3V when a wired remote control is connected/ When not connected.	0	-	RS232C→MAIN
				42VR5 42XR3 50XR4 61XR3	-	-	-	-	-	-	-	(NC for Model R)
TM	1	SCL5	Clock line of the I2C bus		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	0	0	0	-	MAIN→SENB
	2	GND	GND		0	0	0	0	0	0	-	-
	3	VDD+3.3V	3.3V power supply for analog signals		0	3.3	3.3	0	0	0	-	MAIN→SENB
	4	SDA5	Data line of the I2C bus		0	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	0	0	0	-	MAIN←→SENB
TR	1	SCL5	Clock line of the I2C bus		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	0	0	0	-	SENB→SEND
	2	GND	GND		0	0	0	0	0	0	-	-
	3	VDD+3.3V	3.3V power supply for analog signals		0	3.3	3.3	0	0	0	-	SENB→SEND
	4	SDA5	Data line of the I2C bus		0	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	0	0	0	-	SENB←→SEND
TS	1	SCL5	Clock line of the I2C bus		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	0	0	0	-	SEND→SENC
	2	GND	GND		0	0	0	0	0	0	-	-
	3	VDD+3.3V	3.3V power supply for analog signals		0	3.3	3.3	0	0	0	-	SEND→SENC
	4	SDA5	Data line of the I2C bus		0	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	0	0	0	-	SEND←→SENC
FA	1	FAN-CTL	Voltage-controllable power supply	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-
				42XM3 42XR3	0	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	0	0	0	-	MAIN→FAN
				50XM4 50XR4	0	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
				61XM3 61XR3	0	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	FAN lock detect signal output	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
				42XM3 42XR3 50XM4 50XR4 61XM3 61XR3	0	0V during normal fan operation;3.3V dc while the fan is stopped.	0V during normal fan operation;3.3V dc while the fan is stopped.	0	0	0	-	FAN→MAIN
FB	1	FAN-CTL	Voltage-controllable power supply	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-
				42XM3 42XR3	0	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	0	0	0	-	MAIN→FAN
				50XM4 50XR4	0	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
				61XM3 61XR3	0	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	FAN lock detect signal output	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-
				42XM3 42XR3 50XM4 50XR4 61XM3 61XR3	0	0V during normal fan operation;3.3V dc while the fan is stopped.	0V during normal fan operation;3.3V dc while the fan is stopped.	0	0	0	-	FAN→MAIN
FC	1	FAN-CTL	Voltage-controllable power supply	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	-	-	-	-	-	-	-	-
				61XM3 61XR3	0	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	FAN→MAIN
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	FAN lock detect signal output	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	-	-	-	-	-	-	-	-
				61XM3 61XR3	0	0V during normal fan operation;3.3V dc while the fan is stopped.	0V during normal fan operation;3.3V dc while the fan is stopped.	0	0	0	-	FAN→MAIN
AD	1	GND	GND		0	0	0	0	0	0	-	-
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	Module alarm signal		0	5Vdc during normal PDP operation; 0V when the PDP is out of order.	5Vdc during normal PDP operation; 0V when the PDP is out of order.	0	0	0	-	PDP→MAIN
	4	GND	GND		0	0	0	0	0	0	-	-

Name	Pin No.	Pin name	Function	Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
				AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
					No signal	With signal					
	5	PS+	PSS input PS+	0	PSS LVDS serial differential PS+ input 0Vac; Bias 1.1Vdc	PSS LVDS serial differential PS+ input 0.3Vac; Bias 1.25Vdc	0	0	0	-	PDP→MAIN
	6	PS-	PSS input PS-	0	PSS LVDS serial differential PS+ input 0Vac; Bias 1.4Vdc	PSS LVDS serial differential PS+ input 0.3Vac; Bias 1.25Vdc	0	0	0	-	PDP→MAIN
	7	MSEL	42V5 compatible interface OFF	0	0	0	0	0	0	-	-
	8	GND	GND	0	0	0	0	0	0	-	-
	9	RH+	OSD system output H+	0	OSD LVDS serial differential H+ output 0Vac; Bias 1.1Vdc	OSD LVDS serial differential H+ output 0Vac; Bias 1.1Vdc	0	0	0	-	MAIN→PDP
	10	RH-	OSD system output H–	0	OSD LVDS serial differential H- output 0Vac; Bias 1.4Vdc	OSD LVDS serial differential H- output 0Vac; Bias 1.4Vdc	0	0	0	-	MAIN→PDP
	11	RG+	OSD system output G+	0	OSD LVDS serial differential G+ output 0.3Vac; Bias 1.25Vdc	OSD LVDS serial differential G+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	12	RG-	OSD system output G-	0	OSD LVDS serial differential G- output 0.3Vac; Bias 1.25Vdc	OSD LVDS serial differential G- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	13	RF+	Mode system output F+	0	Video mode LVDS serial differential F+ output 0.3Vac; Bias 1.25Vdc	Video mode LVDS serial differential F+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	14	RF-	Mode system output F-	0	Video mode LVDS serial differential F- output 0.3Vac; Bias 1.25Vdc	Video mode LVDS serial differential F- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	15	GND	GND	0	0	0	0	0	0	-	-
	16	RE+	Video system output E+	0	Video mode LVDS serial differential E+ output 0Vac; Bias 1.1Vdc	Video mode LVDS serial differential E+ output 0Vac; Bias 1.1Vdc * Only for the PX-42VP4 Series, 0.3Vac and bias 1.25 Vdc in theater mode when 60Hz motion pictures are displayed.	0	0	0	-	MAIN→PDP
	17	RE-	Video system output E-	0	Video mode LVDS serial differential E- output 0Vac; Bias 1.4Vdc	Video mode LVDS serial differential E- output 0.3Vac; Bias 1.25Vdc * Only for the PX-42VP4 Series, 0.3Vac and bias 1.25 Vdc in theater mode when 60Hz motion pictures are displayed.	0	0	0	-	MAIN→PDP
	18	RD+	Video system output D+	0	Video mode LVDS serial differential D+ output 0Vac; Bias 1.1Vdc	Video mode LVDS serial differential D+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	19	RD-	Video system output D–	0	Video mode LVDS serial differential D- output 0Vac; Bias 1.4Vdc	Video mode LVDS serial differential D- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP

Name	Pin No.	Pin name	Function	Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
				AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
					No signal	With signal					
	20	RCLK+	Video system output clock+	0	Video data clock LVDS serial differential clock+ output 0.3Vac; Bias 1.25Vdc	Video data clock LVDS serial differential clock+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	21	RCLK-	Video system output clock–	0	Video data clock LVDS serial differential clock- output 0.3Vac; Bias 1.25Vdc	Video data clock LVDS serial differential clock- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	22	GND	GND	0	0	0	0	0	0	-	-
	23	RC+	Video system output C+	0	Video data LVDS serial differential C+ output 0.3Vac; Bias 1.25Vdc	Video data LVDS serial differential C+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	24	RC-	Video system output C–	0	Video data LVDS serial differential C- output 0.3Vac; Bias 1.25Vdc	Video data LVDS serial differential C- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	25	RB+	Video system output B+	0	Video data LVDS serial differential B+ output 0Vac; Bias 1.1Vdc	Video data LVDS serial differential B+ output 0Vac; Bias 1.1Vdc	0	0	0	-	MAIN→PDP
	26	RB-	Video system output B–	0	Video data LVDS serial differential B- output 0Vac; Bias 1.4Vdc	Video data LVDS serial differential B- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	27	RA+	Video system output A+	0	Video data LVDS serial differential A+ output 0Vac; Bias 1.1Vdc	Video data LVDS serial differential A+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	28	RA-	Video system output A–	0	Video data LVDS serial differential A- output 0Vac; Bias 1.4Vdc	Video data LVDS serial differential A- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	29	GND	GND	0	0	0	0	0	0	-	-
	30	GND	GND	0	0	0	0	0	0	-	-
	31	GND	GND	0	0	0	0	0	0	-	-
LD	1	REMIN1	Infrared remote control data	0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	0	-	LED→PWR
	2	LEDCTL1	Standby red LED control	0	0	0	3.3	3.3	0	-	PWR→LED
	3	LEDCTL2	POWER ON green LED control	0	3.3	3.3	0	0	0	-	PWR→LED
	4	GND	GND	0	0	0	0	0	0	-	-
	5	M+5V	5V power supply for microcomputer	0	5	5	5	5	0	-	PWR→LED
PW	1	SW7	Power start control	0	6.8	6.8	6.8	6.8	0	-	PW→MAIN
	2	POIN	Power start detection	0	3.3	3.3	3.3	3.3	0	-	PW→MAIN
	3	GND	GND	0	0	0	0	0	0	-	-
	4	M+5V	5V power supply for microcomputer	0	5	5	5	5	0	-	MAIN→PW
	5	M+7V	7V power supply for microcomputer	0	6.8	6.8	6.8	6.8	6.8	-	MAIN→PW
	6	REMIN1	Infrared remote control data	0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	0	-	PW→MAIN
	7	LEDCTL1	Standby red LED control	0	0	0	3.3	3.3	0	-	MAIN→PW
	8	LEDCTL2	POWER ON green LED control	0	3.3	3.3	0	0	0	-	MAIN→PW
SW	1	CTL1	Key input detection	0	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0	-	SW→MAIN
	2	CTL2	Key input detection	0	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0	-	SW→MAIN
	3	GND	GND	0	0	0	0	0	0	-	-
PA	1	S+12	+12V power supply for audio circuits	0	12	12	0	0	0	-	POWER→AUDIO
	2	S+12	+12V power supply for audio circuits	0	12	12	0	0	0	-	POWER→AUDIO
	3	S+12	+12V power supply for audio circuits	0	12	12	0	0	0	-	POWER→AUDIO
	4	GND	GND	0	0	0	0	0	0	-	-

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
	5	GND	GND		0	0	0	0	0	0	-	-
	6	GND	GND		0	0	0	0	0	0	-	-
PD	1	ALARM	PDP alarm signal	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	0	5Vdc when the PDP is normal; 0V when it is abnormal.	5Vdc when the PDP is normal; 0V when it is abnormal.	0	0	0	-	PDP→POWER
	2	D.GND	GND		0	0	0	0	0	0	-	-
	3	D.GND	GND		0	0	0	0	0	0	-	-
	4	D.GND	GND		0	0	0	0	0	0	-	-
	5	D.GND	GND		0	0	0	0	0	0	-	-
	6	D+60	Vd power supply for PDP		0	60Vdc (changeable according to the PDP)	60Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	7	D+60	digital circuits		0	60Vdc (changeable according to the PDP)	60Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	8	NC	digital circuits		-	-	-	-	-	-	-	-
	9	D+170	Vs power supply for PDP high-voltage circuits		0	170Vdc (changeable according to the PDP)	170Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	10	D+170	Vs power supply for PDP high-voltage circuits		0	170Vdc (changeable according to the PDP)	170Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	1	ALARM	PDP alarm signal	61XM3 61XR3	0	5Vdc when the PDP is normal; 0V when it is abnormal.	5Vdc when the PDP is normal; 0V when it is abnormal.	0	0	0	-	PDP→POWER
	2	D.GND	GND		0	0	0	0	0	0	-	-
	3	D.GND	GND		0	0	0	0	0	0	-	-
	4	D+5	5V power supply for digital circuits		0	5.15	5.15	0	0	0	-	POWER→PDP
	5	D.GND	GND		0	0	0	0	0	0	-	-
	6	D.GND	GND		0	0	0	0	0	0	-	-
	7	D+65	Vd power supply for PDP		0	65Vdc (changeable according to the PDP)	65Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	8	NC	digital circuits		-	-	-	-	-	-	-	-
	9	D+175	Vs power supply for PDP high-voltage circuits		0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	10	D+175	Vs power supply for PDP high-voltage circuits		0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
PH	1	D+5	5V power supply for digital circuits	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	0	5.15	5.15	0	0	0	-	PDWER→PDP
	2	D+5	5V power supply for digital circuits		0	5.15	5.15	0	0	0	-	PDWER→PDP
	3	D.GND	GND		0	0	0	0	0	0	-	-
	4	D.GND	GND		0	0	0	0	0	0	-	-
	1	D+175	Vs power supply for PDP high-voltage circuits	61XM3 61XR3	0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	2	D+175	Vs power supply for PDP high-voltage circuits		0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	3	NC	Non-connection		-	-	-	-	-	-	-	-
	4	D+65	Vd power supply for PDP		0	65Vdc (changeable according to the PDP)	65Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	5	D.GND	digital circuits		0	0	0	0	0	0	-	-
	6	D.GND	GND		0	0	0	0	0	0	-	-
	7	D+5	5V power supply for digital circuits		0	5.15	5.15	0	0	0	-	POWER→PDP
	8	D.GND	GND		0	0	0	0	0	0	-	-
	9	D.GND	GND		0	0	0	0	0	0	-	-

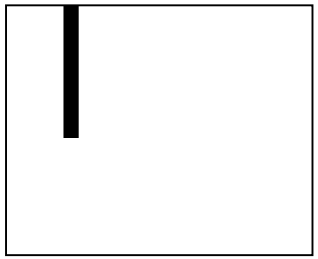
42 Inch Section (PDP-424MV)

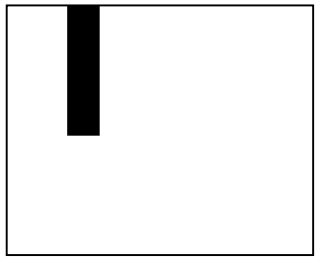
Page:	Topics Covered:
51	Missing Data or Scan Symptoms
52~53	Testing Data Relay boards
54~55	Testing High Voltage board and Scan IC's
56~57	Testing High Voltage board for no picture
58	Digital board Symptoms
59~61	Power Off Symptoms
62	Picture problems (High Voltage)
63	All Connector locations
64	Screw locations on PCB's
65~66	Parts list
67~73	Adjustments
74~77	Disassembly
78~83	Connector pin Voltages and Signals

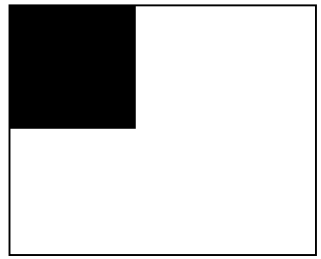
Symptom: Vertical line Block

PDP-424MV

(Note) Typical Symptom are only shown. Another Symptom might appear.







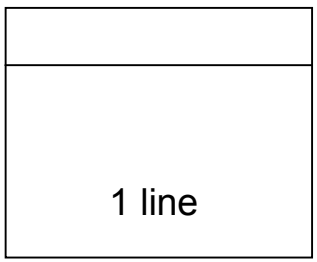
Data/Address line problems

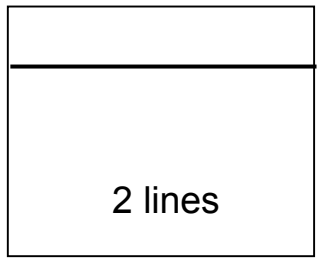
Cause/Countermeasure:
① Open or contact failure of Data flexible Cable⇒**Clean, Reconnect or exchange connector.**
② Failure in Data IC⇒Replace **PDP.**

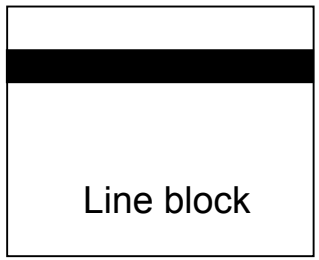
Cause/Countermeasure:
①Open or contact failure of connector between Data Relay Board and Digital Board/High Voltage Board⇒ **Clean, Reconnect or exchange connector.**
②Open or contact failure of multiple Data flexible Cables⇒ **Clean, Reconnect or exchange connector.**
③Failure in Data Relay Board ⇒**Exchange the Data Relay Board.**
④Failure in multiple Data IC⇒Replace **PDP.**

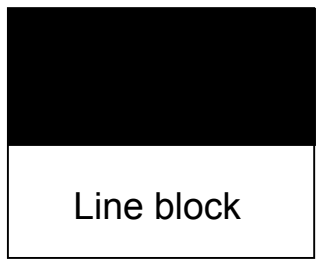
Horizontal Line

Symptom: Horizontal lines









Scan line problems

Cause/Countermeasure:
①Failure in Scan IC on Scan Relay Board⇒**Exchange Scan Relay Board.**
②Open or contact failure of Scan Flexible Cable (CN01-CN04) at output side of Scan Relay Board (U, D)⇒ **Clean, Reconnect or exchange connector.**
③Contact failure of connector between Scan Board and Scan Relay Board⇒ **Clean, Reconnect or exchange connector.**
④Short between terminals of Scan IC due to screw dust⇒ **Clean around the terminals.**

Testing Data Relay Boards and IC's

Cause/Countermeasure:

② If the connector CN7709 disconnected from Data Relay Board (RU) is short-circuited between Pin 1 (or 2) and GND (Pin 3 or 4) ⇒Data IC is broken ⇒Replace **PDP.**

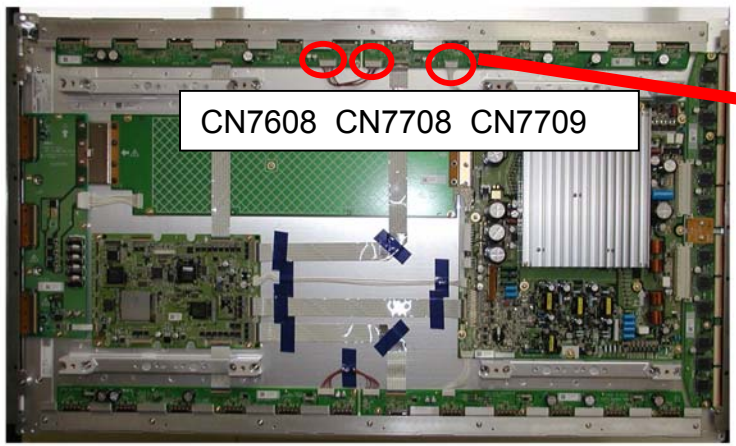
③ If the connector CN7709 disconnected from Data Relay Board (RU) is short-circuited between Pin 5 (or 6) and GND (Pin 3 or 4) ⇒ Data Relay Board (LU) or (RU) is failed ⇒

a) If the connector CN7608 disconnected from Data Relay Board (LU) is short-circuited between Pin 1 and GND (Pin 2 or 6) ⇒ Data Relay Board (LU) is failed ⇒ **Exchange Data Relay Board (LU).**

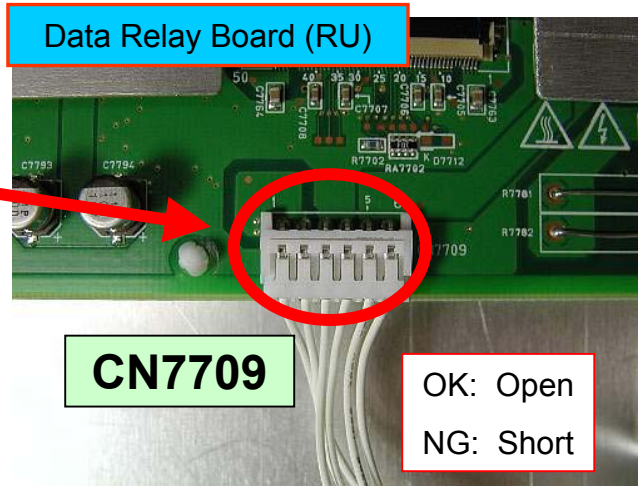
b) If the connector CN7708 disconnected from Data Relay Board (RU) is short-circuited between Pin 1 and GND (Pin 2 or 6) ⇒ Data Relay Board (RU) is failed ⇒ **Exchange Data Relay Board (RU).**

Data Relay Board (LU)

Data Relay Board (RU)



Data Relay Board (RU)



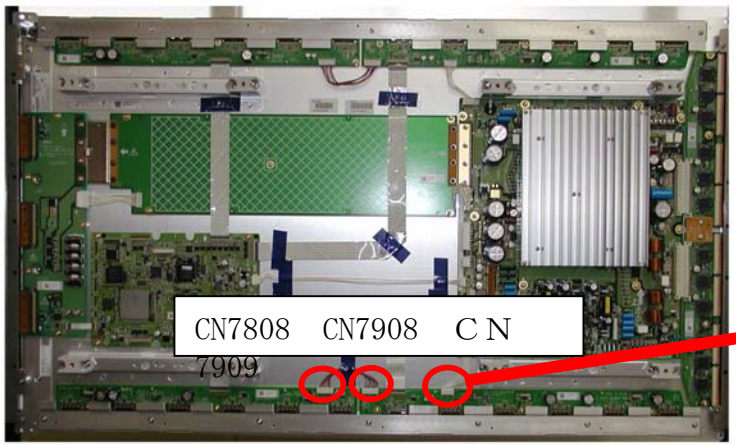
Cause/ Countermeasure :

④ If the connector CN7909 disconnected from Data Relay Board (RD) is short-circuited between Pin 1 (or 2) and GND (Pin 3 or 4) ⇒Data IC is broken ⇒Repair **PDP.**

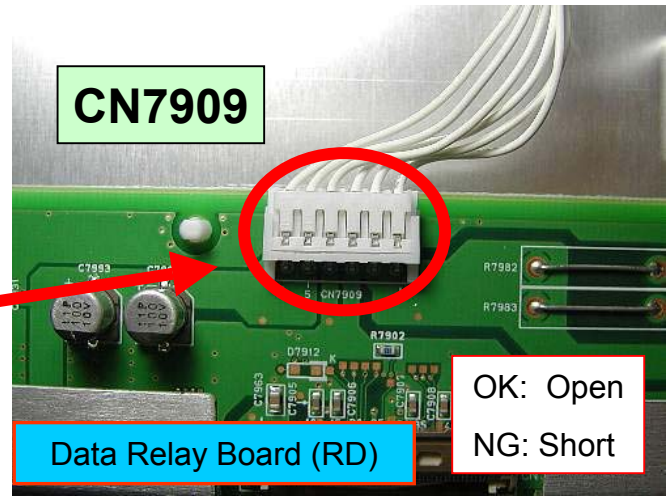
⑤ If the connector CN7909 disconnected from Data Relay Board (RD) is short-circuited between Pin 5 (or 6) and GND (Pin 3 or 4) ⇒ Data Relay Board (LD) or (RD) is failed ⇒

a) If the connector CN7808 disconnected from Data Relay Board (LD) is short-circuited between Pin 8 and GND (Pin 3 or 7) ⇒ Data Relay Board (LD) is failed ⇒ **Exchange Data Relay Board (LD).**

b) If the connector CN7908 disconnected from Data Relay Board (RD) is short-circuited between Pin 8 and GND (Pin 3 or 7) ⇒ Data Relay Board (RD) is failed ⇒ **Exchange Data Relay Board (RD).**



Data Relay Board (LD) Data Relay Board (RD)

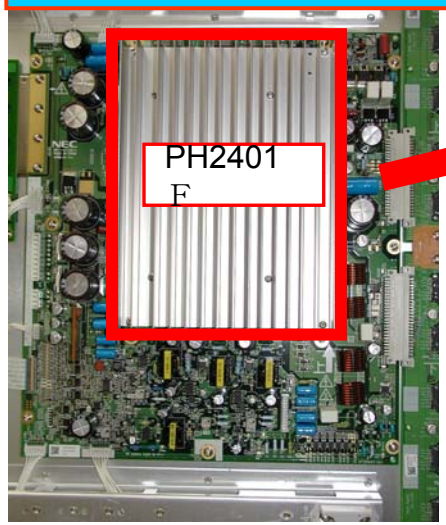


Testing High Voltage board and Scan IC's

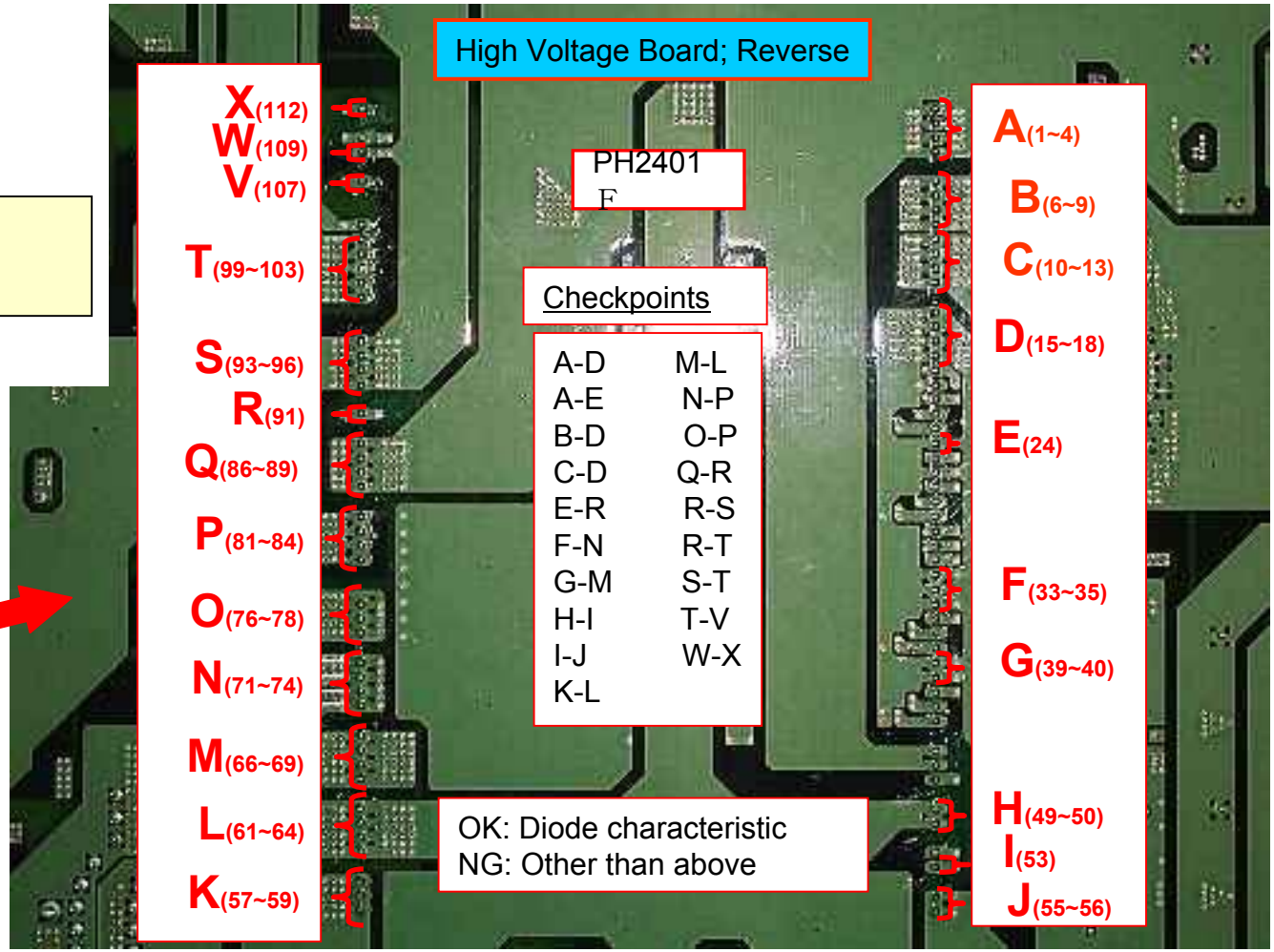
Symptom:No Picture. (Priming doesn't flash if W-X terminals are short-circuited.)

Cause/Countermeasure: No Diode characteristic ⇒ **Exchange High Voltage Board.**

High Voltage Board; Surface



High Voltage Board; Reverse



Cause/Countermeasure： If short-circuited, disconnect connector between High Voltage Board and Scan Relay Board and,

④ Short between NEGA-POSI on High Voltage Board

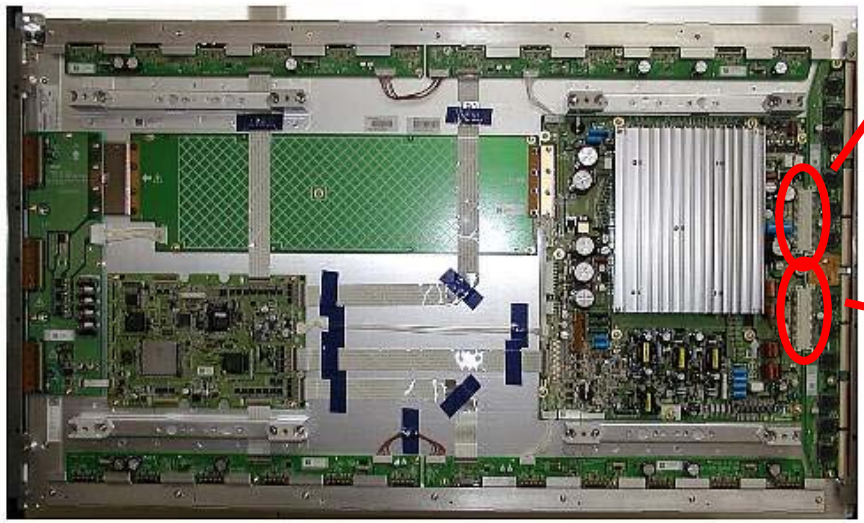
⇒ **Exchange High Voltage Board.**

⑤ Short between NEGA-POSI on Scan Relay Board (U)

⇒ **Exchange Scan Relay Board (U).**

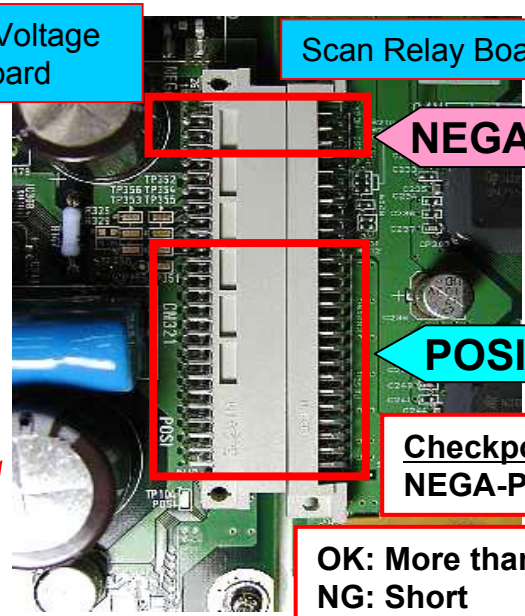
⑥Short between NEGA-POSI on Scan Relay Board (D)

⇒ **Exchange Scan Relay Board (D).**



High Voltage Board

Scan Relay Board (U)

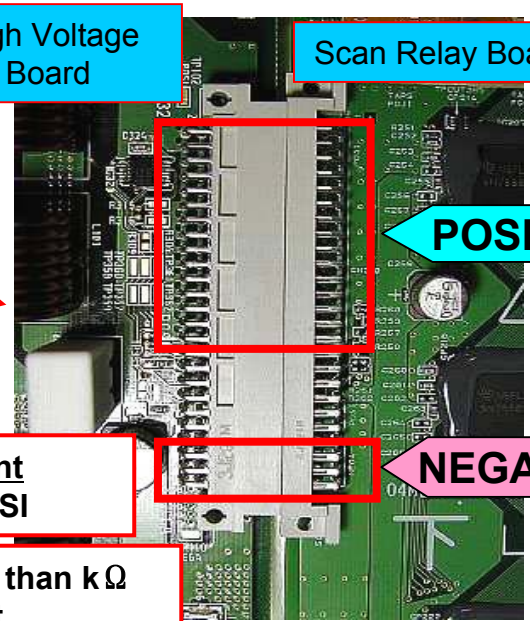


Checkpoint
NEGA-POSI

OK: More than kΩ
NG: Short

High Voltage Board

Scan Relay Board (D)



Checkpoint
NEGA-POSI

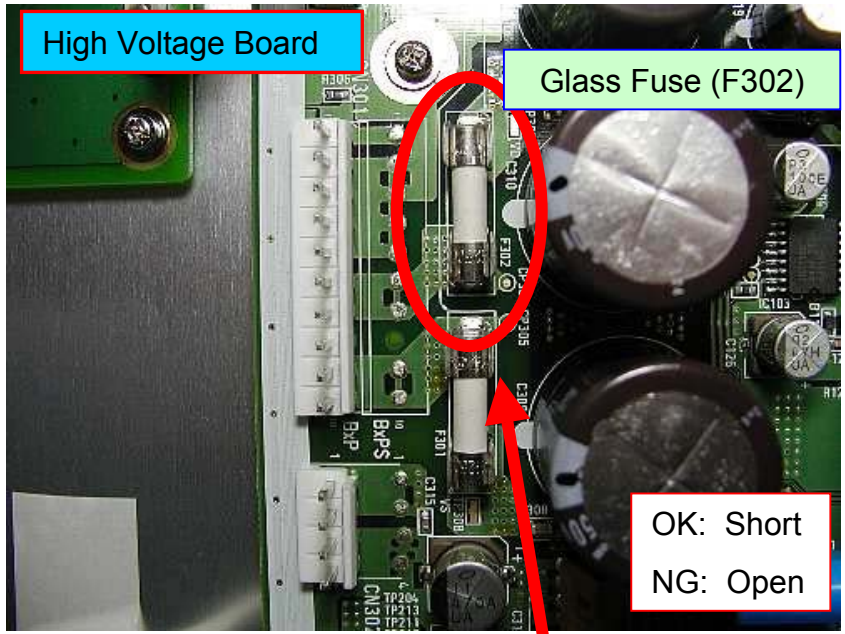
OK: More than kΩ
NG: Short

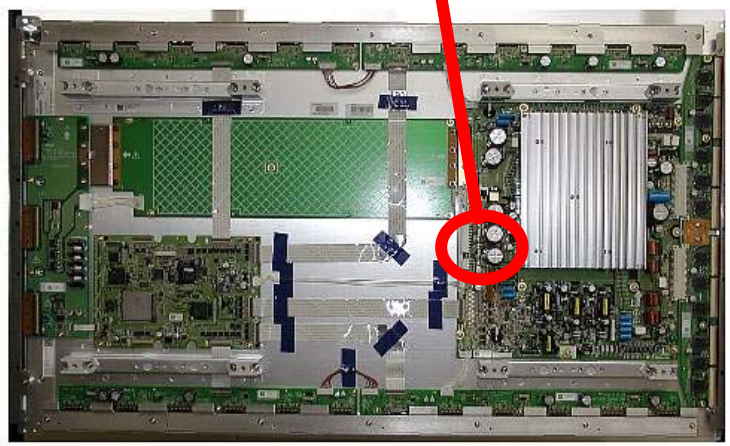
Picture Defect

(Note) Typical symptom are only shown.
Another Symptom might appear.

Symptom:No Picture(Priming flash).

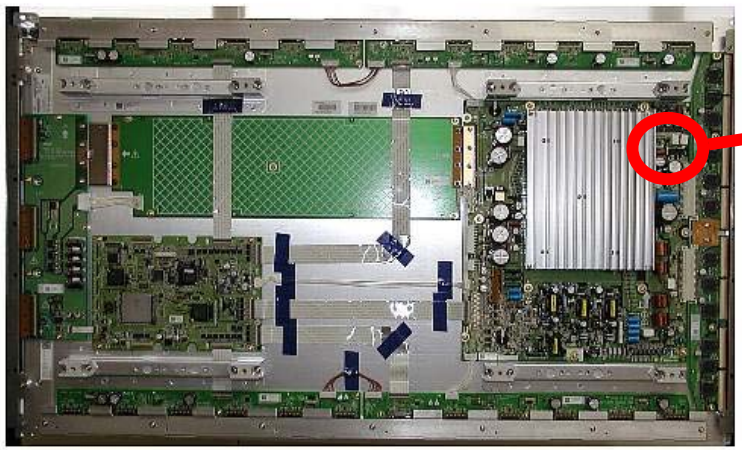
Cause/Countermeasure: ①F302 open⇒
Exchange High Voltage Board.

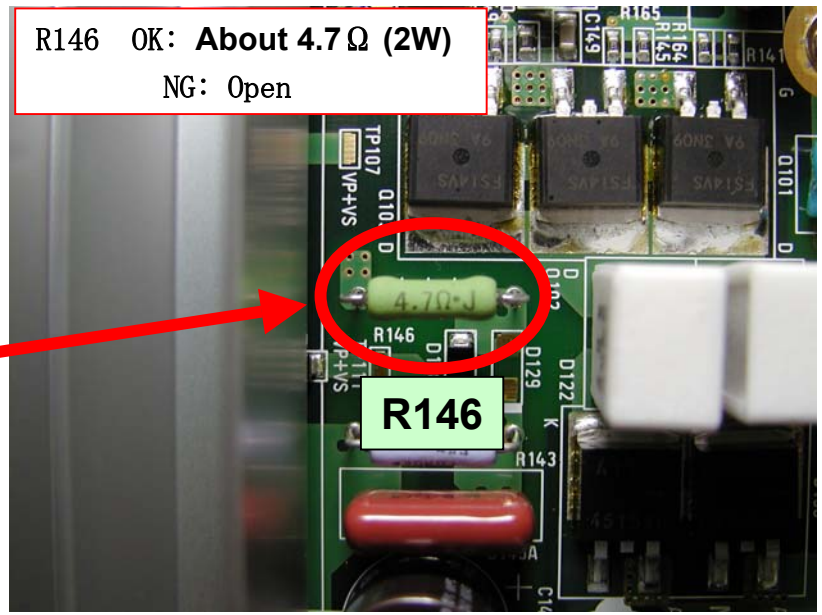




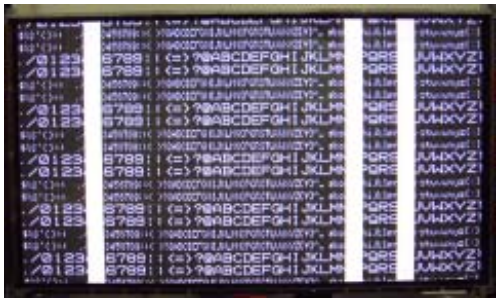
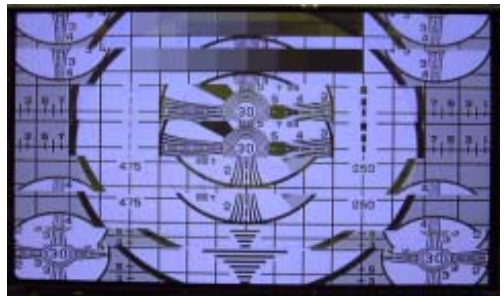
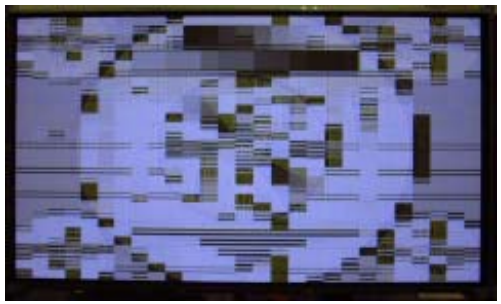
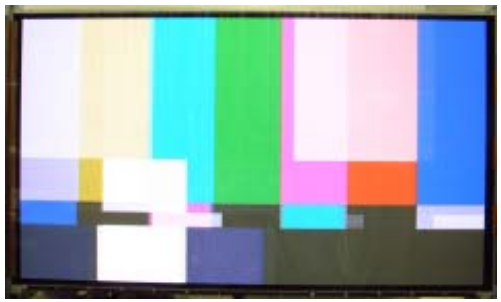
Symptom: No Picture(Priming doesn't flash)

Cause/Countermeasure: R146 open⇒ **Exchange High Voltage Board.**





Symptom: Abnormalities in a picture

 One or more vertical bands, Multiple vertical lines	Transparent vertical band	 Out of synchronization or duplication
 Mosaic	 Rectangular color shear, color discrepancy, shear in display	A number of lateral lines, Regular noise

Cause/Countermeasure: ① Contact failure of connector adjacent to Digital Board or short circuit due to conductive obstacle
⇒ **Clean or Reconnect**

② Failure in circuit on Digital Board ⇒ **Failure in Digital Board**

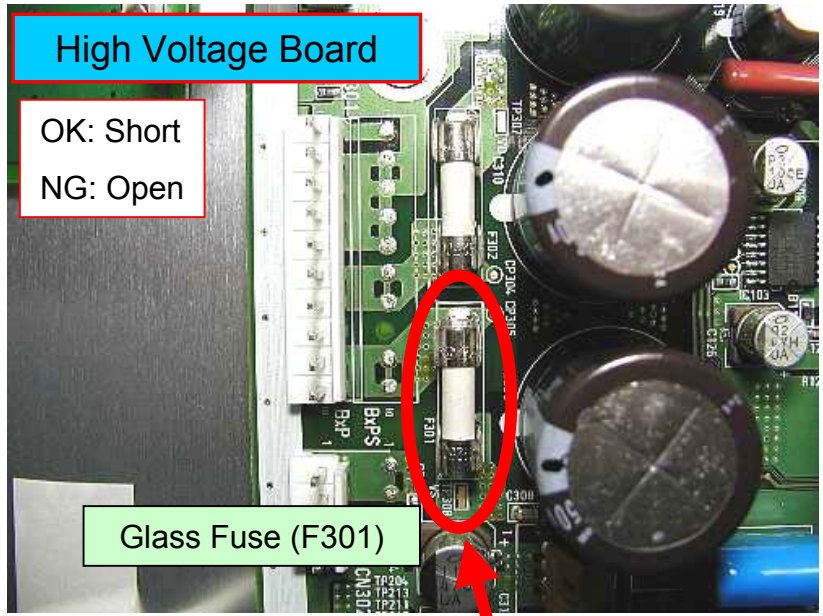
Power off

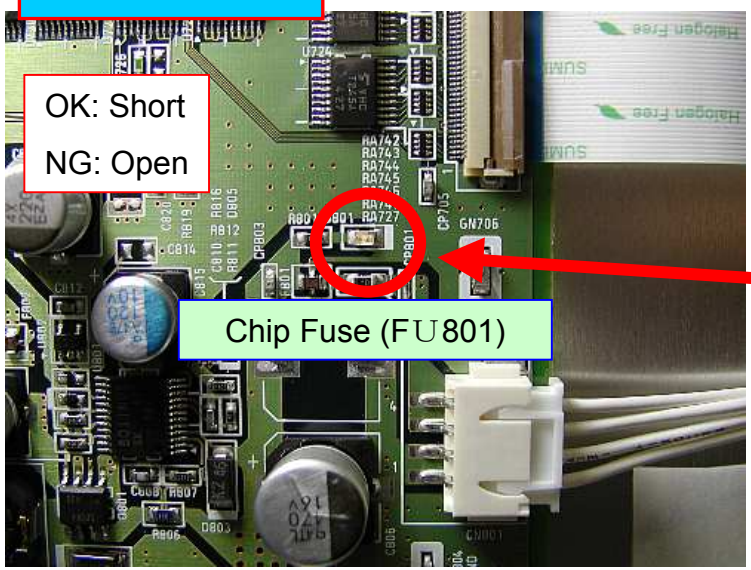
(Note) Typical Symptom are only shown. Another Symptom might appear.

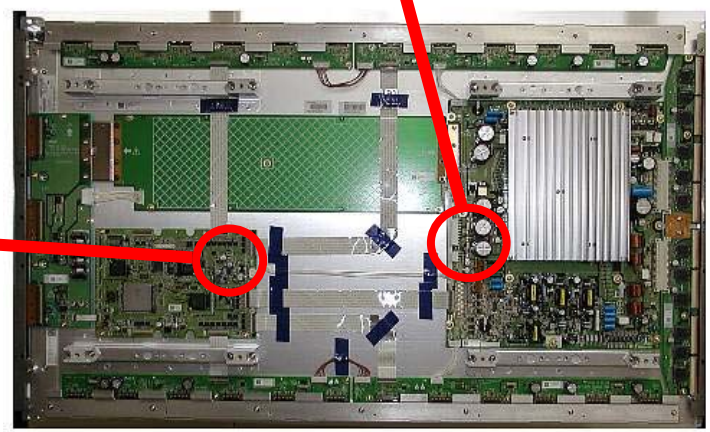
Symptom: No Picture(Priming doesn't flash)
⇒ Power off

Cause/Countermeasure: ①F301 open ⇒ **Exchange High Voltage Assy**

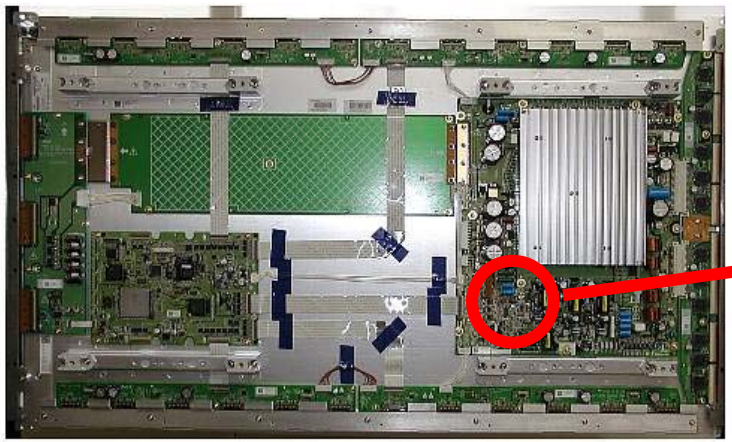
②FU801 open ⇒ **Exchange Digital Assy**

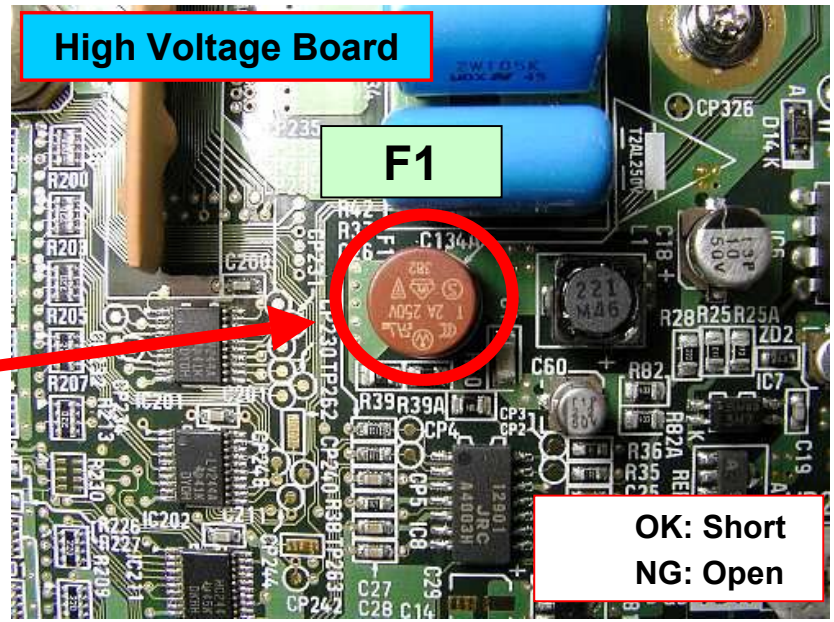






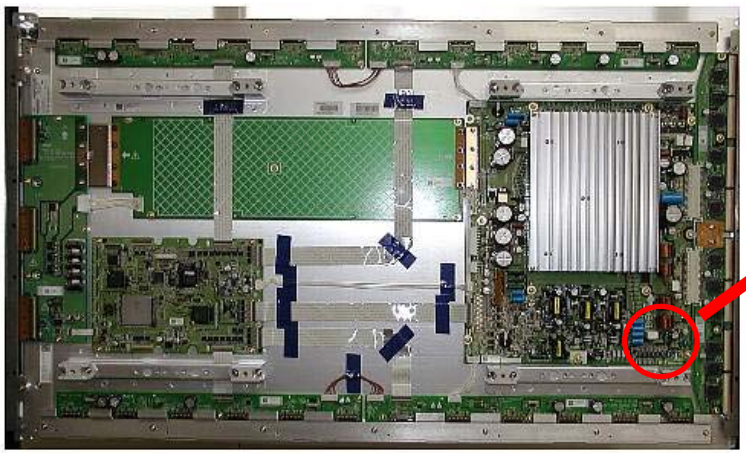
Cause/Countermeasure: ③ F1 open ⇒ **Exchange High Voltage Board.**

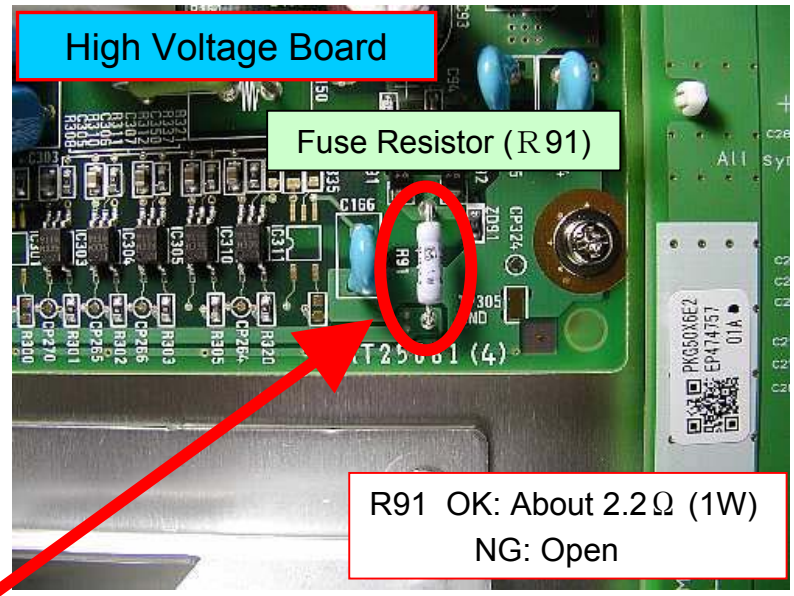




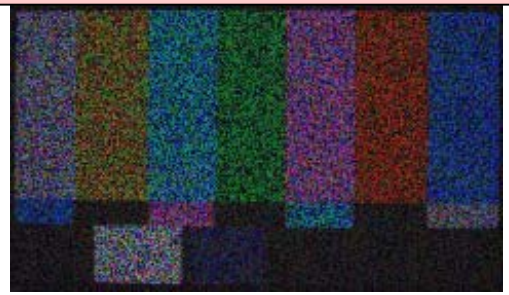
Symptom: No Picture ⇒Power off(Priming flash)

Cause/Countermeasure: R91 open ⇒ **Exchange High Voltage Board.**

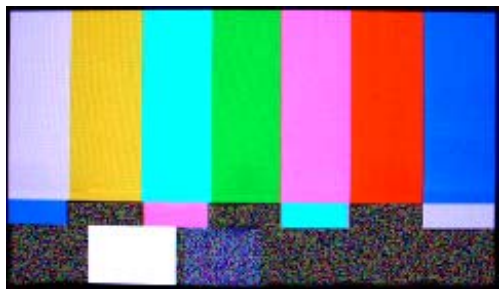




Symptom: Failure in Writing⇒ Power off

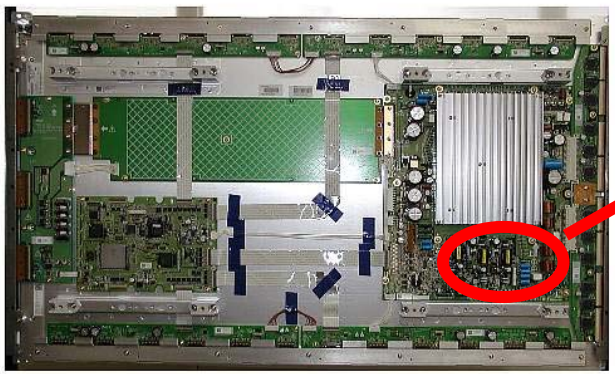


Dark and rough picture



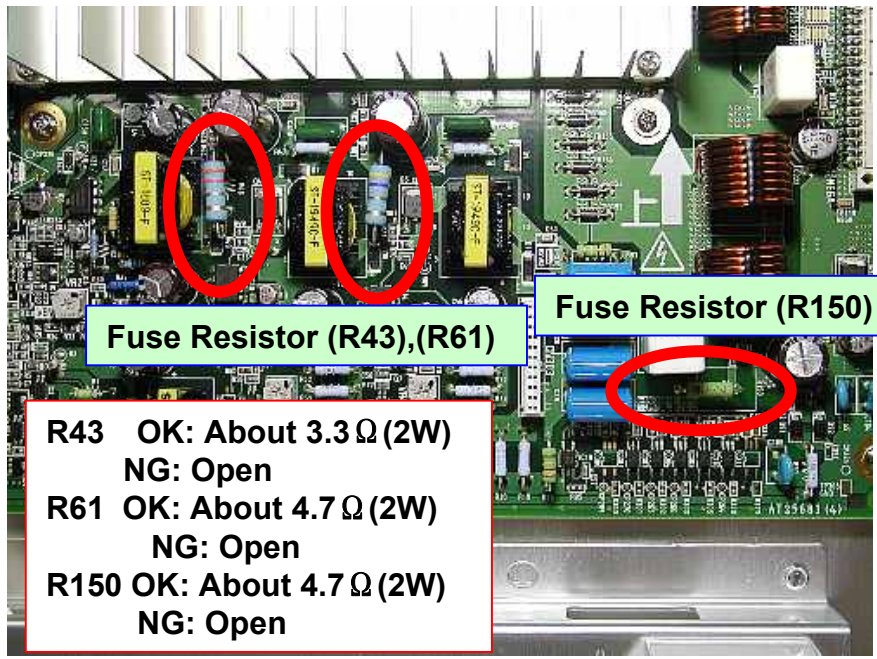
Many light spots on dark portion

Cause/Countermeasure: R43,R61 open⇒ **Exchange High Voltage Board.**



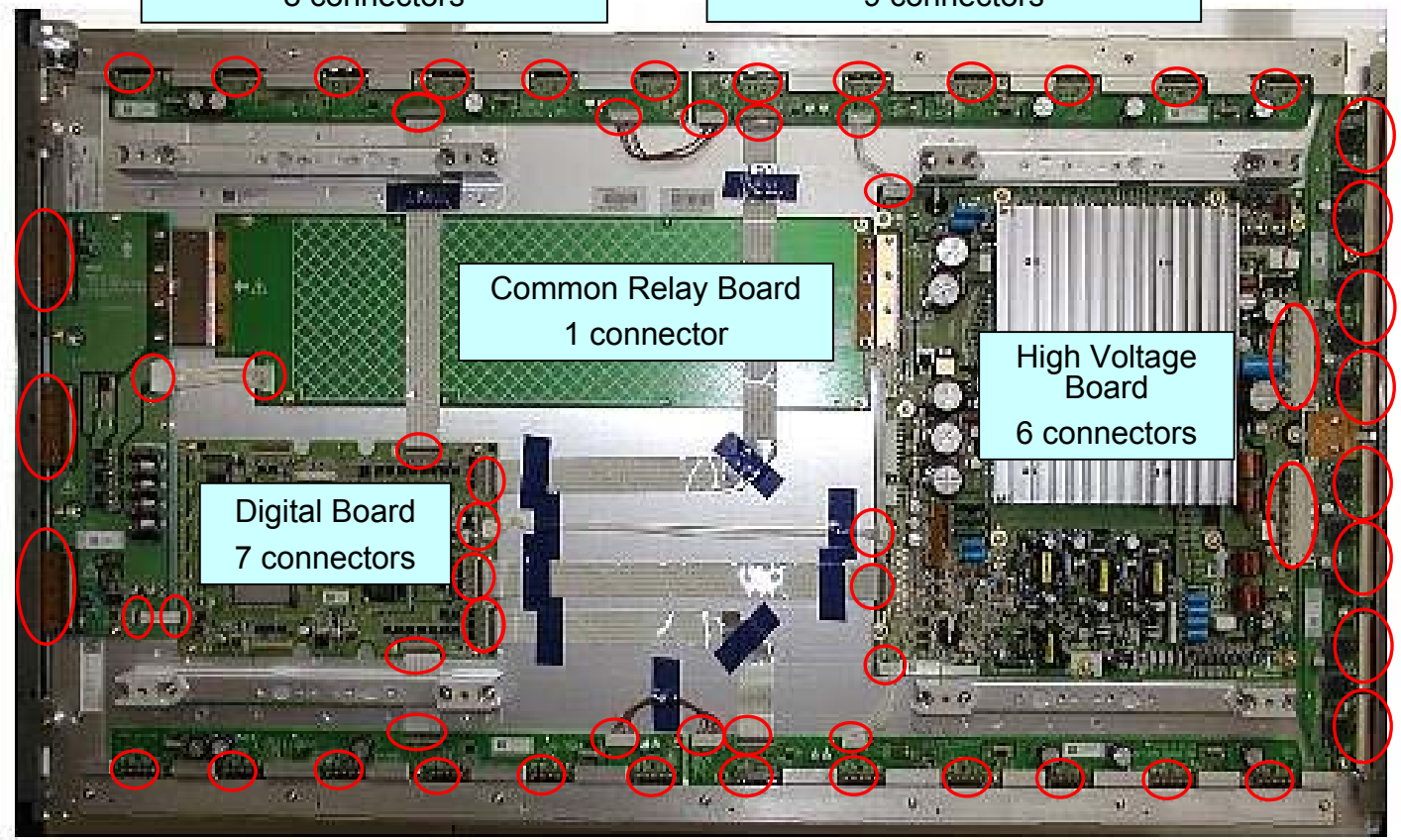
Symptom: White Pattern even in no signal ⇒ Power off

Cause/Countermeasure: R150 open ⇒ **Exchange High Voltage Board.**



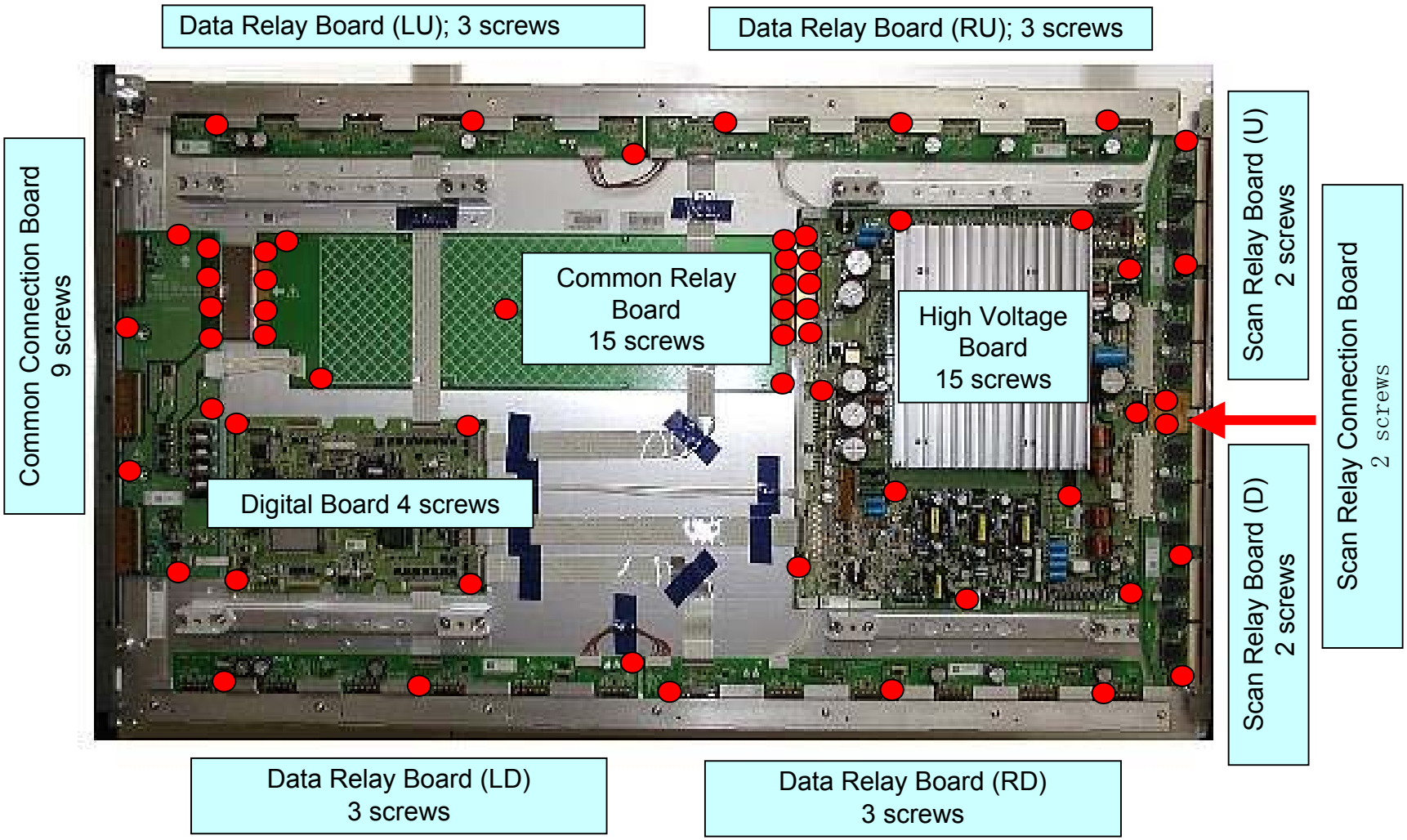
Connectors and cables all PCB's.

(Caution) Be careful of handling cables and connectors to avoid Failure. Be sure to take off Heat Sink before detaching Data Relay Board.



Screw locations all PCB's.

(Caution) Be careful not to leave a screw or screw dust. Be sure to take off Heat Sink before detach Data Relay Board. See the next page for the procedure.

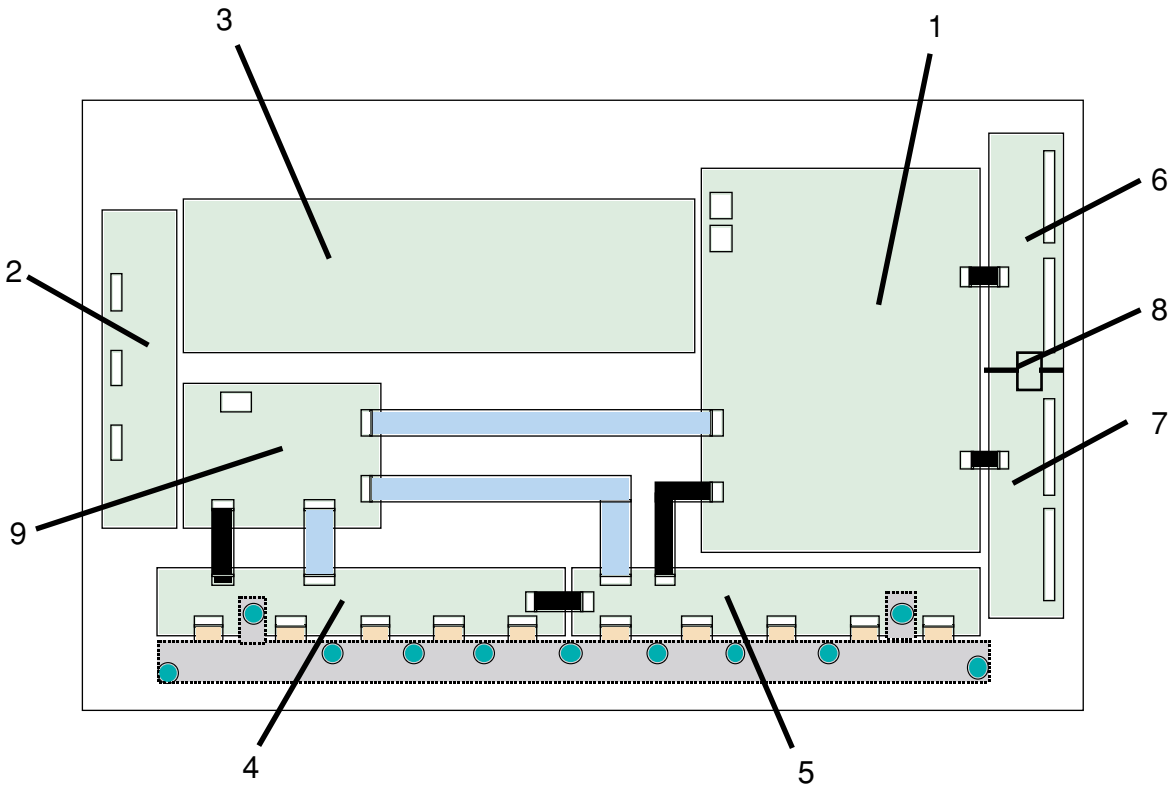


PARTS LIST

PDP-424MV

SYMBOL	PART NAME		PART NO	QTY	NOTE
	TYPE NAME	VERSION			
1	PKG42B3G1	01D	9S899523	1	High voltage PKG
2	PKG42B3J4	01A	9S899627	1	Common divergence PKG
3	PKG42B3J3	01A	9S899282	1	Common relay PKG
4	PKG42B3J1	02B	9S899524	1	Signal relay PKG (left)
5	PKG42B3J2	02B	9S899525	1	Signal relay PKG (right)
6	PKG42B3E1	01C	9S899351	1	Scanning relay PKG-U
	PKG42B3E1	01D	9S899528	1	
7	PKG42B3E2	01C	9S899355	1	Scanning relay PKG-D
	PKG42B3E2	01D	9S899531	1	
8	PKG42B3E3	Version nothing	9S899443	1	Scanning relay PKG-C
9	PKG42B3C2	03J-06	9S899847	1	Digital PKG

Notes:
- The version of a board assy (PKG) is indicated on the label on the board assy.
- When replacing the scanning relay board assys (PKGs,) make sure that the PKG-U (PKG42B3E1) and PKG-D (PKG42B3E2) of compatible versions are used, to ensure correct scanning timing.



Version label of the board assy (PKG)

Digital PKG	Other PKG
• Part name • Serial number • HW version • SW version	• Part name • Serial number • Version number

Compatible table of the board version

Part Name of PKG	Target Version	Compatible Version	Conditions	Remarks
High voltage PKG	0 1 A	0 1 D		
P K G 4 2 B 3 G 1	0 1 B			
	0 1 C			
Common divergence PKG	0 1 A	0 1 A		
P K G 4 2 B 3 J 4				
Common relay PKG	0 1 A	0 1 A		
P K G 4 2 B 3 J 3				
Signal relay PKG (left)	0 2 A	0 2 B		
P K G 4 2 B 3 J 1	0 2 B			
Signal relay PKG (right)	0 2 A	0 2 B		
P K G 4 2 B 3 J 2	0 2 B			
Scanning relay PKG-U P K G 4 2 B 3 E 1	0 1 C	0 1 C		
	0 1 D	0 1 D		
Scanning relay PKG-D P K G 4 2 B 3 E 2	0 1 C	0 1 C		
	0 1 D	0 1 D		
Digital PKG P K G 4 2 B 3 C 2	0 1 A ― 0 6	0 3 J ― 0 6		
	0 1 B ― 0 6			
	0 1 D ― 0 6			
	0 1 E ― 0 6			
	0 1 F ― 0 6			
	0 2 E ― 0 6			
	0 2 F ― 0 6			
	0 2 G ― 0 6			
	0 2 J ― 0 6			
	0 3 J ― 0 6			

Note: By referring to the table on compatible versions of the board assys, make sure that board assys of compatible versions are used.

■Adjusting conditions

Adjustments should be carried out in the procedures of A to C specified below. However, any adjustments other than the items A to C below are not required.

A. When the "PDP module" is replaced, adjustments should conform to the adjusting items of [1 and 2] specified below.

B. When the "POWER UNIT" is replaced, adjustments should conform to the adjusting item of [2] specified below.

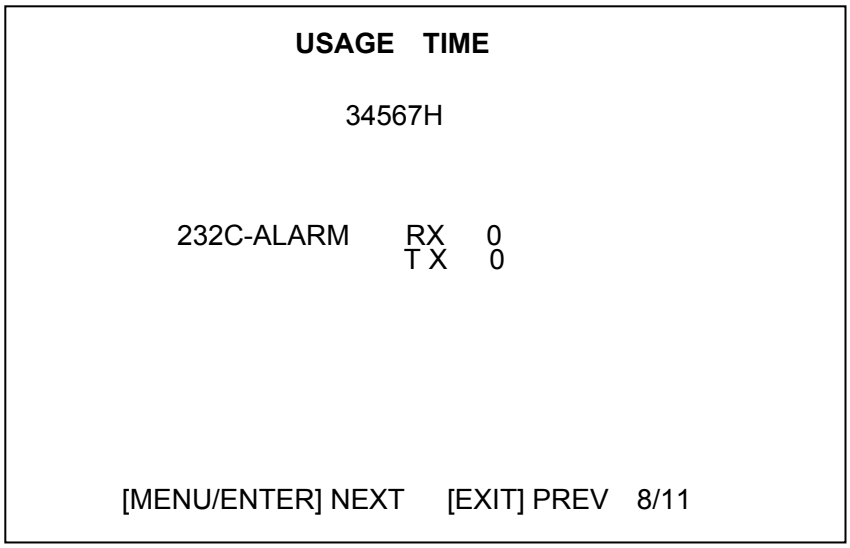
C. When the "MAIN PWB" is replaced, adjustments should conform to the adjusting item of [3] specified below.

■Adjusting items

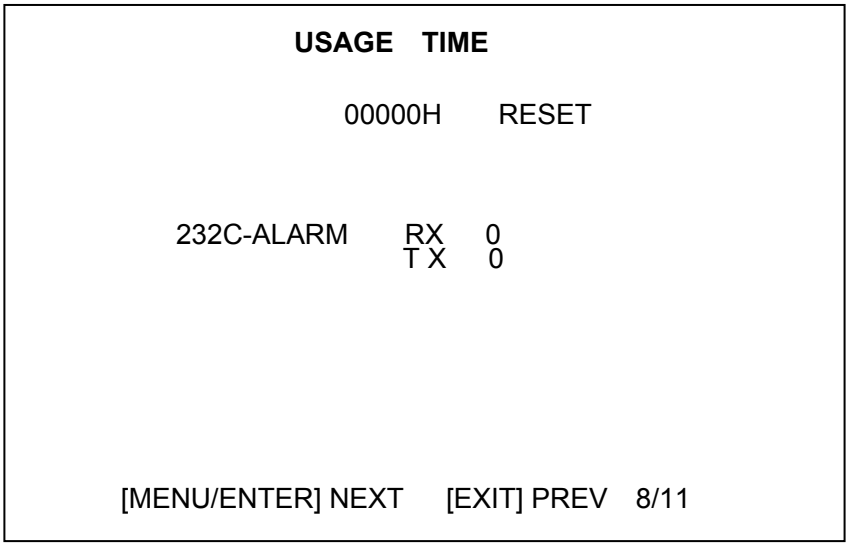
1. Clearing of the usage time (Using the remote control)

(1) Press the keys in the order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] in order to enter the factory adjustment menu.

(2) Press the [MENU/ENTER] key to select the [USAGE TIME] menu (8/11). Then, the integrated time [34567 (hours)] (example) accumulated till the present time is displayed when the main power supply is turned on (except for the standby mode).



(3) When the keys are pressed in the order of [MUTE] → POSITION/CONTROL [▲] → POSITION/CONTROL [▼] → [OFF TIMER], the display is cleared to [00000H]. At that time, the characters of [RESET] are displayed for about 5 seconds on the right side of time display.



2. Adjustment of the power unit (Using a screwdriver for general-purpose adjustments)

2-1. For the PX-42VM5/42VP5/42VR5,PX-42XM3/42XR3 Series

2-1-1. Adjustment of the Vs voltage

(1) Enter a color bar input by means of either video signal of VIDEO input, or DVD/HD input, or RGB input, and turn on the power switch of the main unit.

(2) Turn the volume control (RV203) in the power unit and make adjustments until the voltages of TP204 and TP205 (D, GND) of the power unit attain the voltage values specified for the PDP (Vs value of the voltage regulation indicator label on below the figure) ±1V.

2-1-2. Adjustment of the Vd voltage

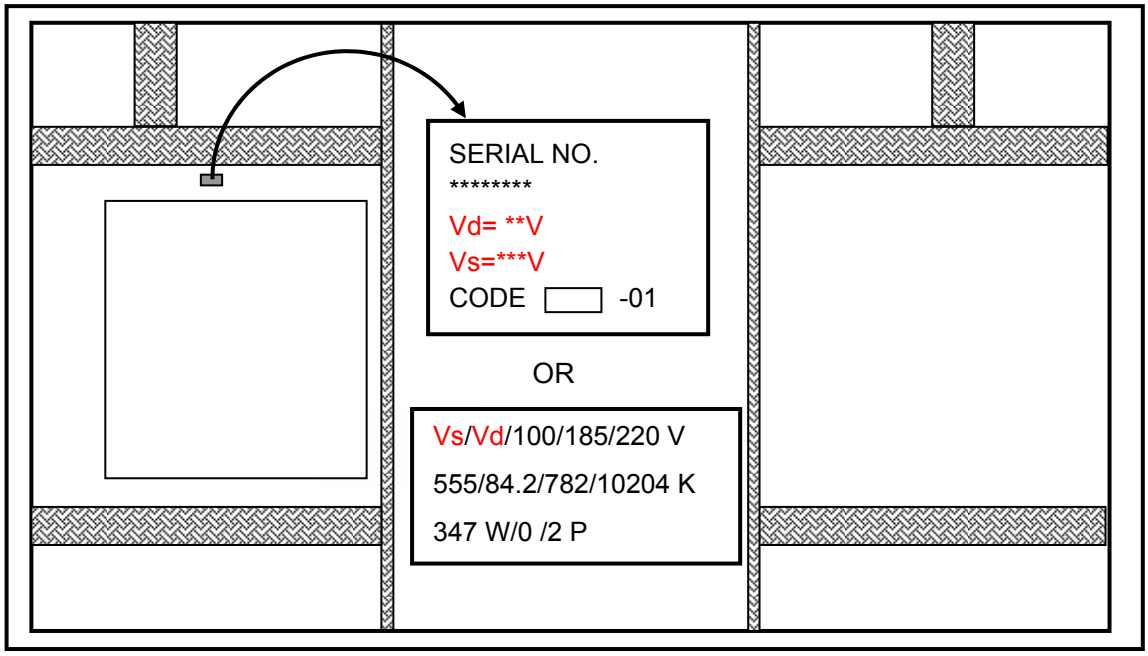
(1) Enter a color bar input by means of either video signal of VIDEO input, or DVD/HD input, or RGB input, and turn on the power switch of the main unit.

(2) Turn the volume control (RV204) in the power unit and make adjustments until the voltages of TP206 and TP205 (D, GND) of the power unit attain the voltage values specified for the PDP (Vd value of the voltage regulation indicator label on below the figure) ±1V.

2-1-3. Adjustment of the +5V voltage

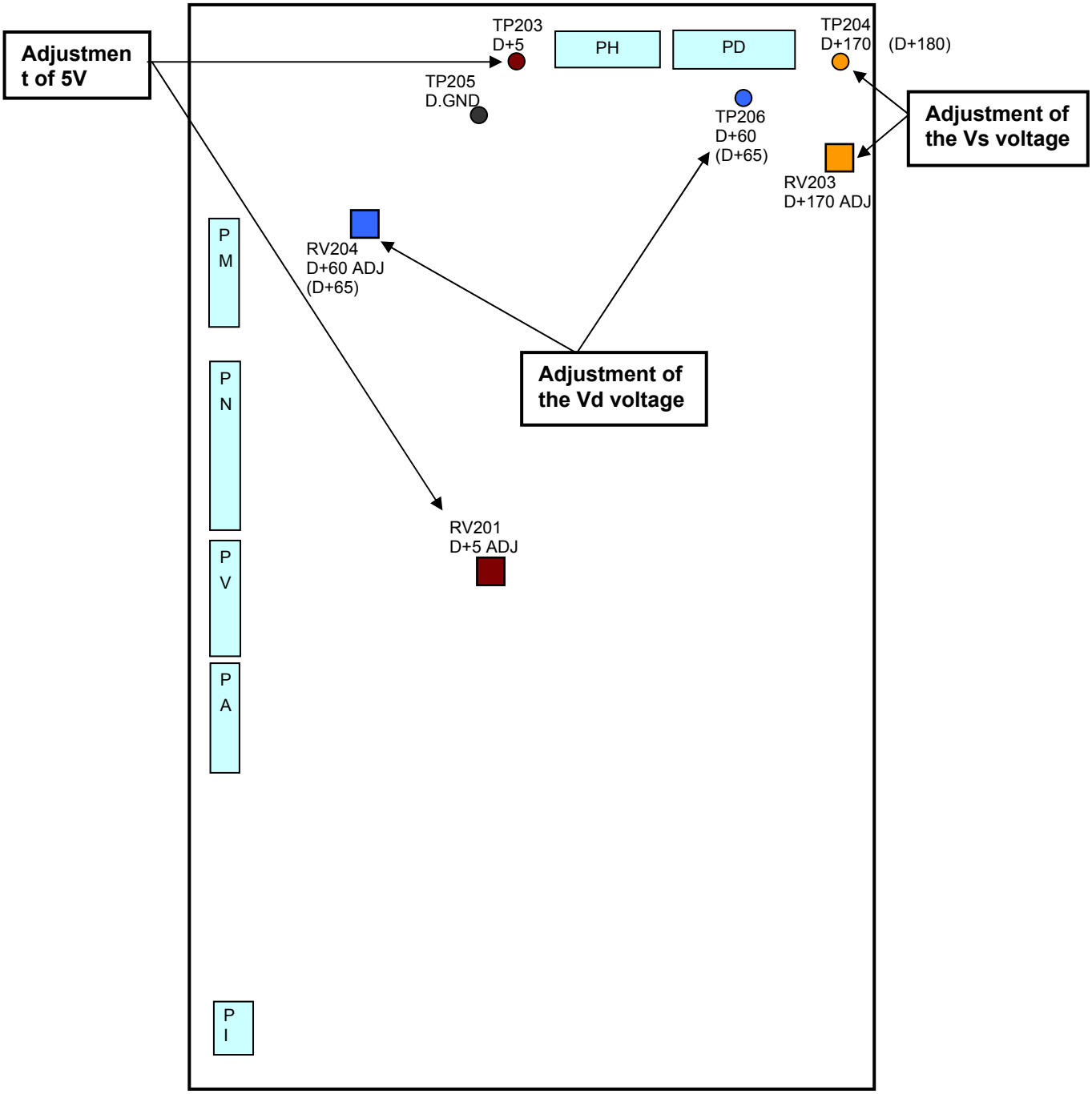
(1) Display a color bar by means of either video signal of VIDEO input, or DVD/HD input, or RGB input.

(2) Confirm that the voltages of TP203 and TP205 (D, GND) of the power unit are maintained at “5.15 ± 0.1V”. Otherwise, turn the volume control (RV201) until the voltage attains “5.15 ± 0.1V”.



(Caution) Rear-side view when the back cover is removed The label is concealed between the MAIN PWB and PDP. Check it by looking through the space from above. The label position can be changed, without notice.

*** Top view of the power unit for the PX-42VM5/42VP5/42VR5,PX-42XM3/42XR3 Series**



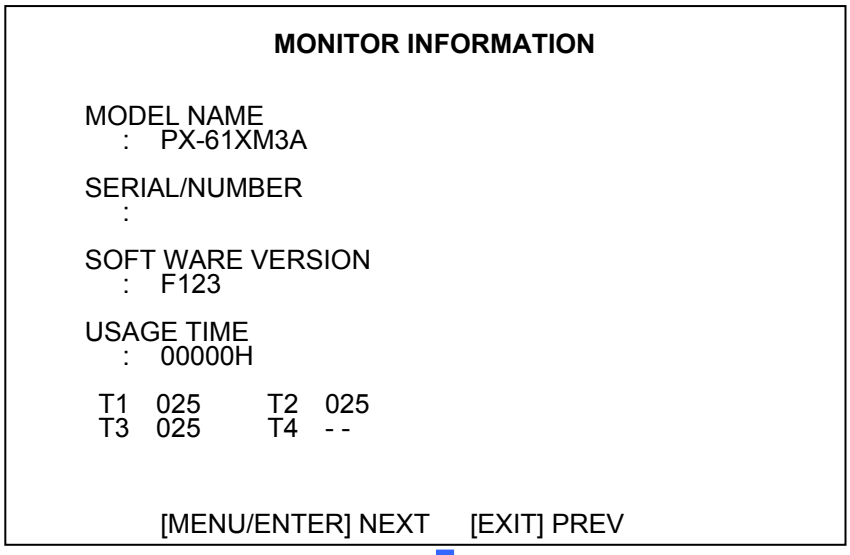
(Caution) The values in ( ) are applicable to the PDP-424MV.

3. Adjustments after the replacement of the MAIN PWB (Using the remote control)

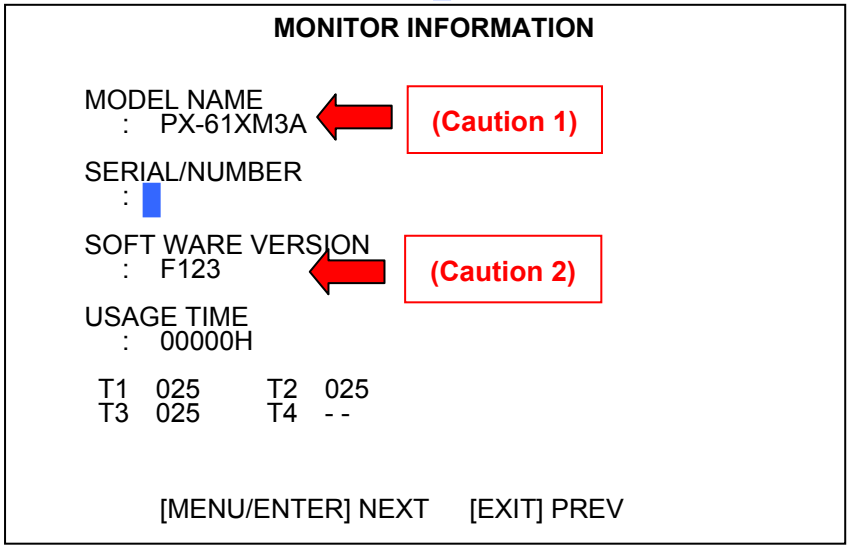
3-1. Product serial No. registration

(1) Press the keys in the order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] in order to enter the factory adjustment menu.

(2) Press the [MENU/ENTER] key to select the [MONITOR INFORMATION] No. menu. (Example : PX-61XM3A)



(3) Press the [WIDE] key 4 times to display a cursor ▮ in the lower column of [SERIAL/NUMBER].



(Caution 1) No modification is possible here because this modification is already finished by. Factory shipment setting (initial setting).

(Caution 2) No modification is possible here because registration is already finished at the time of shipment in terms of maintenance parts.

(4) Moving the POSITION/CONTROL keys of [▲] and [▼], select the numerals and characters of the serial number that is listed in the serial label located on the rear surface of the product. Register the serial number. (Blank → 0 ~ 9 → A ~ Z)

(5) Moving the POSITION/CONTROL keys of [◀] and [▶], select the next digit by means of a cursor.

(6) Repeat the processes of (4) and (5) above and register the serial number completely.

• How to read the serial number

Serial No. ① ② ③ ④⑤⑥⑦ ⑧ ⑨

① ····· Year of manufacture (lower one digit of the year)

② ····· Month of manufacture (January to September = 1 to 9, October = X, November = Y, December =Z)

③ ····· GS model: 1, Other than GS model: 0

④⑤⑥⑦ ····· Serial numbers of 0001 to 9999. The serial number starts with 0001 in each month of production. There is no duplication or missing of the number in the same month.

⑧ ····· Place of manufacture

⑨ ····· Control number S→A→M→T→Z→N→K→U→C→W→J→P

(* Arbitrary for the first symbol)

(Example) First unit in March 1999 → 93000019C

First unit in November 2000 → 0Y000019W

(Example) When entering a serial number of [2900123 9Z]

① Move the POSITION/CONTROL keys of [▲] and [▼] to select [2].

MONITOR INFORMATION

MODEL NAME
: PX-61XM3A

SERIAL/NUMBER
: 2

SOFT WARE VERSION
: F123

USAGE TIME
: 00000H

T1 025 T2 025
T3 025 T4 - -

[MENU/ENTER] NEXT [EXIT] PREV

② Move the POSITION/CONTROL keys of [◀] and [▶] to select the next digit.

MONITOR INFORMATION

MODEL NAME
: PX-61XM3A

SERIAL/NUMBER
: 2

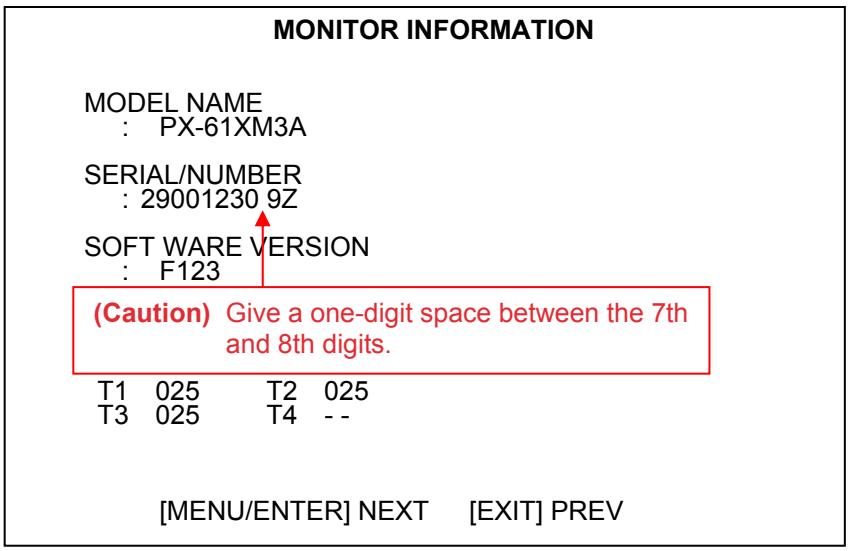
SOFT WARE VERSION
: F123

USAGE TIME
: 00000H

T1 025 T2 025
T3 025 T4 - -

[MENU/ENTER] NEXT [EXIT] PREV

③ Repeat the procedures of ① and ② above, and enter all inputs of [2900123 9Z] from the left side.



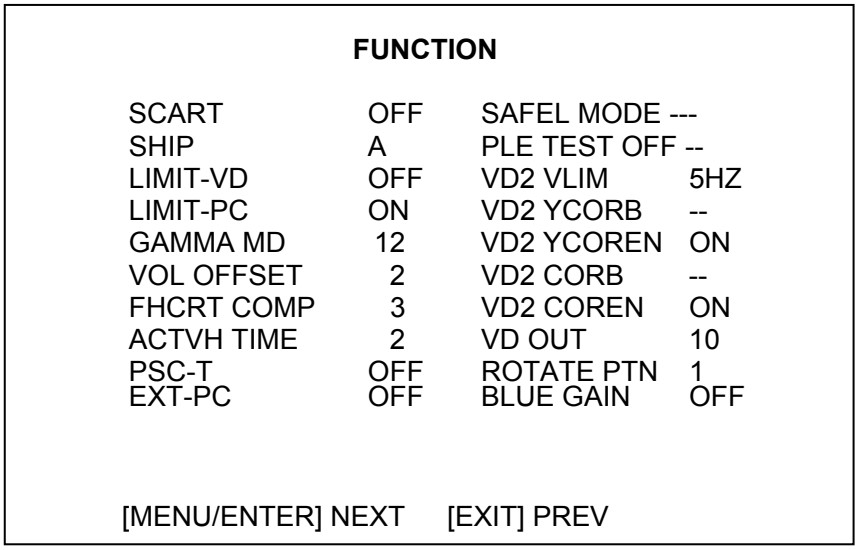
(7) Following the above, setting must be carried out without fail according to "3-2. Factory shipment setting (Initial setting)"

3-2.Factory shipment setting (Initial setting)

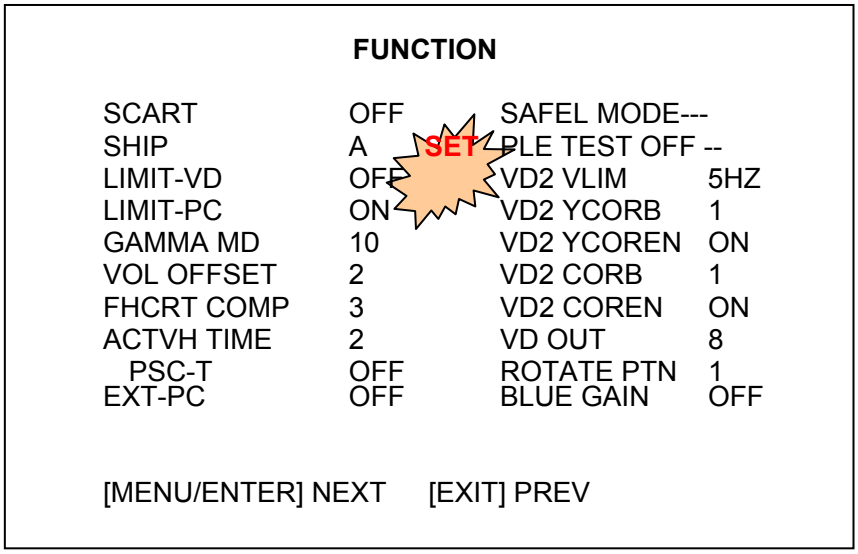
(1) Press the [MENU/ENTER] ke to select the [FUNCTION] menu.

(2) Move the POSITION/CONTROL keys of [▲] and [▼] to the item of [SHIP]. Then, move the POSITION/CONTROL keys of [◀] and [▶] to select [DESTINATION ALPHABETS] shown below. (The asterisks * shown below denote the numerals or the characters.)

J : PX-*****J	JW :	OEM Specifications for use in Japan
A : PX-*****A	AW :	OEM Specifications for North America
G : PX-*****G	GW :	OEM Specifications for European countries
W : PX-*****W	WW :	OEM Specifications for zones other than the above



(3) Press the keys in the order of [MUTE] → POSITION/CONTROL [▲] → POSITION/CONTROL [▼] → [OFF TIMER] to make "Factory shipment setting". When "Factory shipment setting" is executed, the red characters of [SET] is shown for about 5 seconds on the right side of the [DESTINATION ALPHABETS]. The setting is finished when these red characters of [SET] go out. In regard to the factory shipment setting values, refer to the descriptions given below.



(4) Press the keys of the remote control in the order of [POWER ON] → [POWER ON] → [EXIT] → [DISPLAY] in order to withdraw from the Factory shipment setting.

[Factory shipment setting values]

1. Initial setting values for the user menu

MENU	A,AW,G,GW,W,WW	J,JW
POWER ON/OFF	ON	ON
VOLUME	10step	10step
INPUT MODE	VIDEO1	VIDEO1
WIDE MODE	STADIUM	STADIUM
AUTO PICTURE	OFF (RGB1~3)	OFF (RGB1~3)
HD SELECT	1080B *	1080B
LANGUAGE	ENGLISH	JAPANEASE
COLOR SYSTEM	AUTO	AUTO
All items intended to recover the initial values through the selection of [All Reset] in the user menu	Initial values	Initial values

* 1080I for *PX-***R**

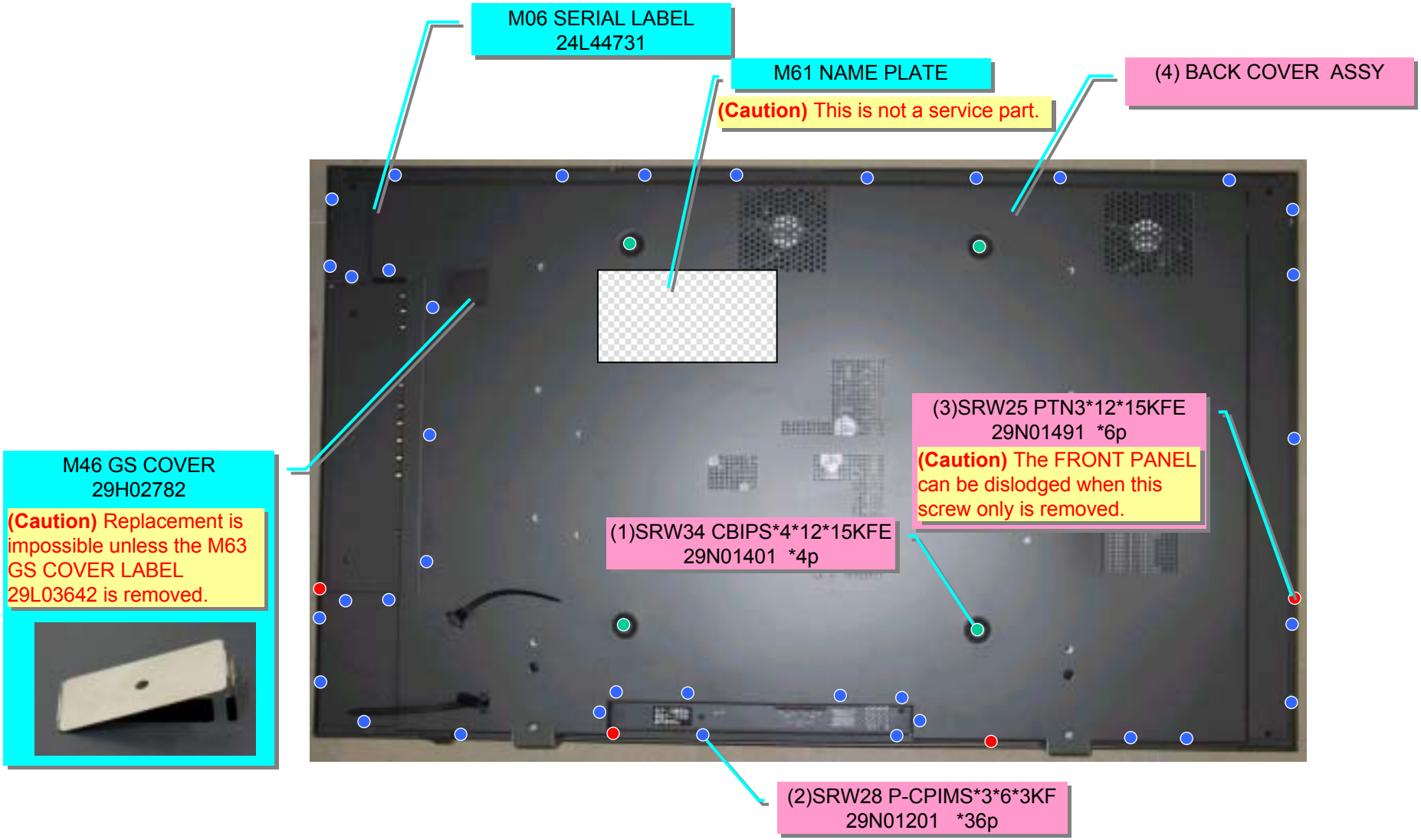
2. Field menu initial setup values (applicable in common to all models)

MENU		A	G	W	J	AW,GW, WW,JW
SERVICE	SHIP	A	G	W	J	AW,GW, WW,JW
	PSC-LIMIT	OFF	OFF	OFF	OFF	OFF
	LIMIT-PC	ON	ON	ON	ON	ON
	U-SCAN	OFF	OFF	OFF	OFF	OFF
	V-FREQ OT	AUTO	60Hz	60Hz	AUTO	AUTO
	V-FREQ VD	AUTO	60Hz	60Hz	AUTO	AUTO
	SYNCLEVEL1	TTL	TTL	TTL	TTL	TTL
	SYNCLEVEL2	TTL	TTL	TTL	TTL	TTL
	SUB-ORB *1	ON	ON	ON	ON	ON
	PIC FREEZE *1	ON	ON	ON	ON	ON
MONITOR INFORMATION	MODEL NAME	PX-****A	PX-****G	PX-****W	PX-****J	*2

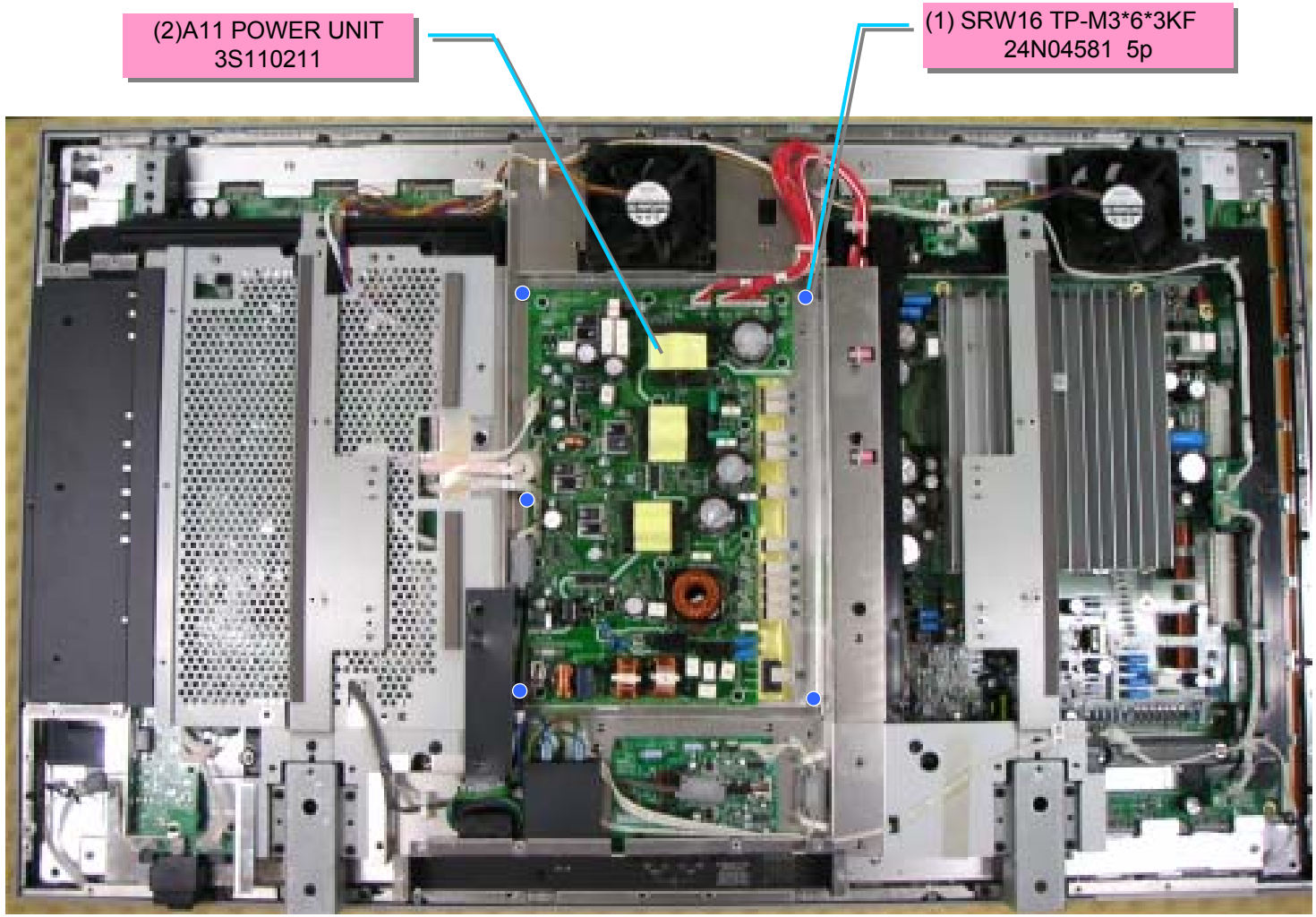
*1:61inch Series only.

*2:Monitor information when SHIP is for AW, GW, WW, JW setup

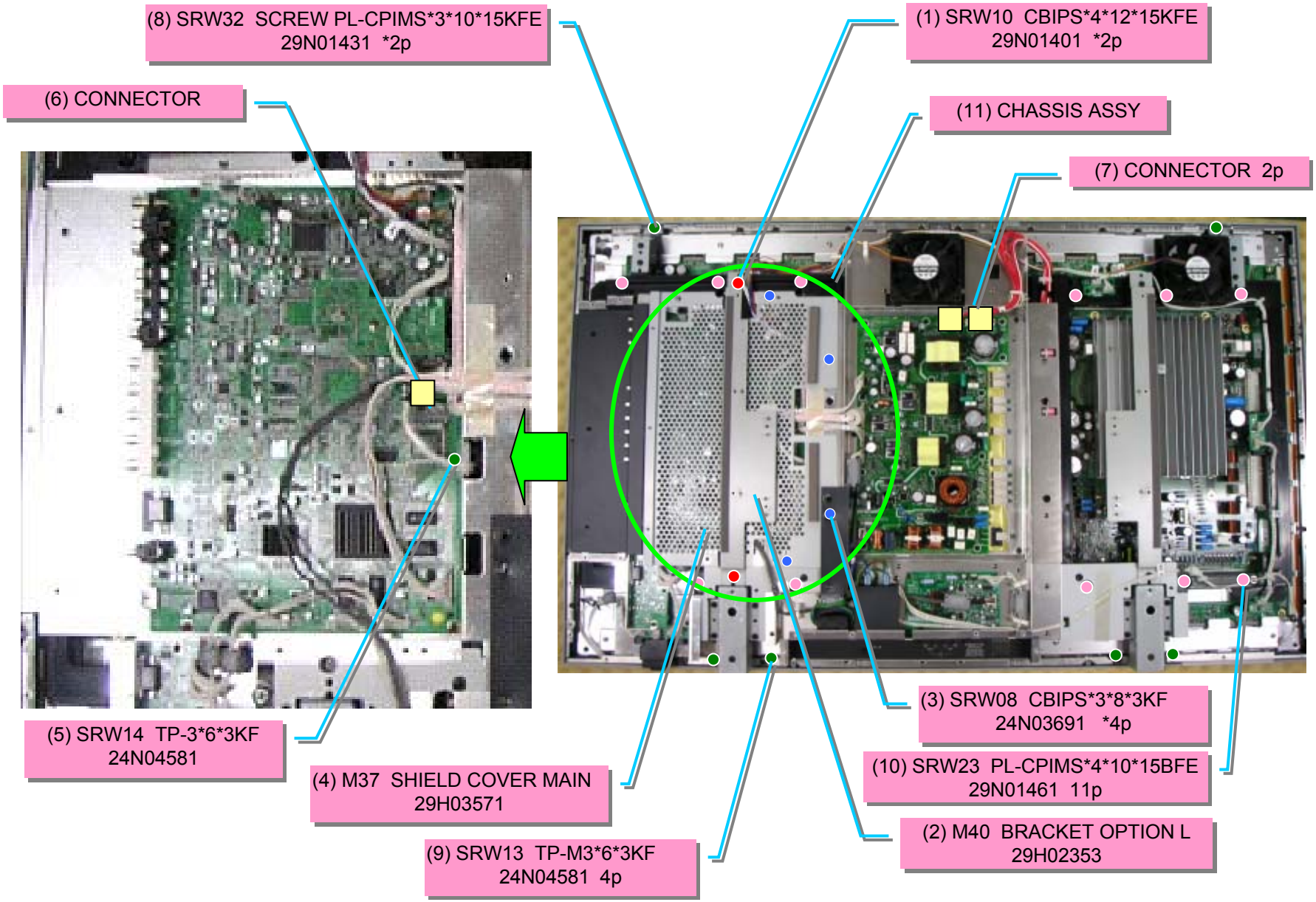
REMOVING BACK COVER


M06 SERIAL LABEL
24L44731
M61 NAME PLATE
(Caution) This is not a service part.
(4) BACK COVER ASSY
M46 GS COVER
29H02782
(Caution) Replacement is impossible unless the M63 GS COVER LABEL 29L03642 is removed.
(3)SRW25 PTN3*12*15KFE
29N01491 *6p
(Caution) The FRONT PANEL can be dislodged when this screw only is removed.
(1)SRW34 CBIPS*4*12*15KFE
29N01401 *4p
(2)SRW28 P-CPIMS*3*6*3KF
29N01201 *36p

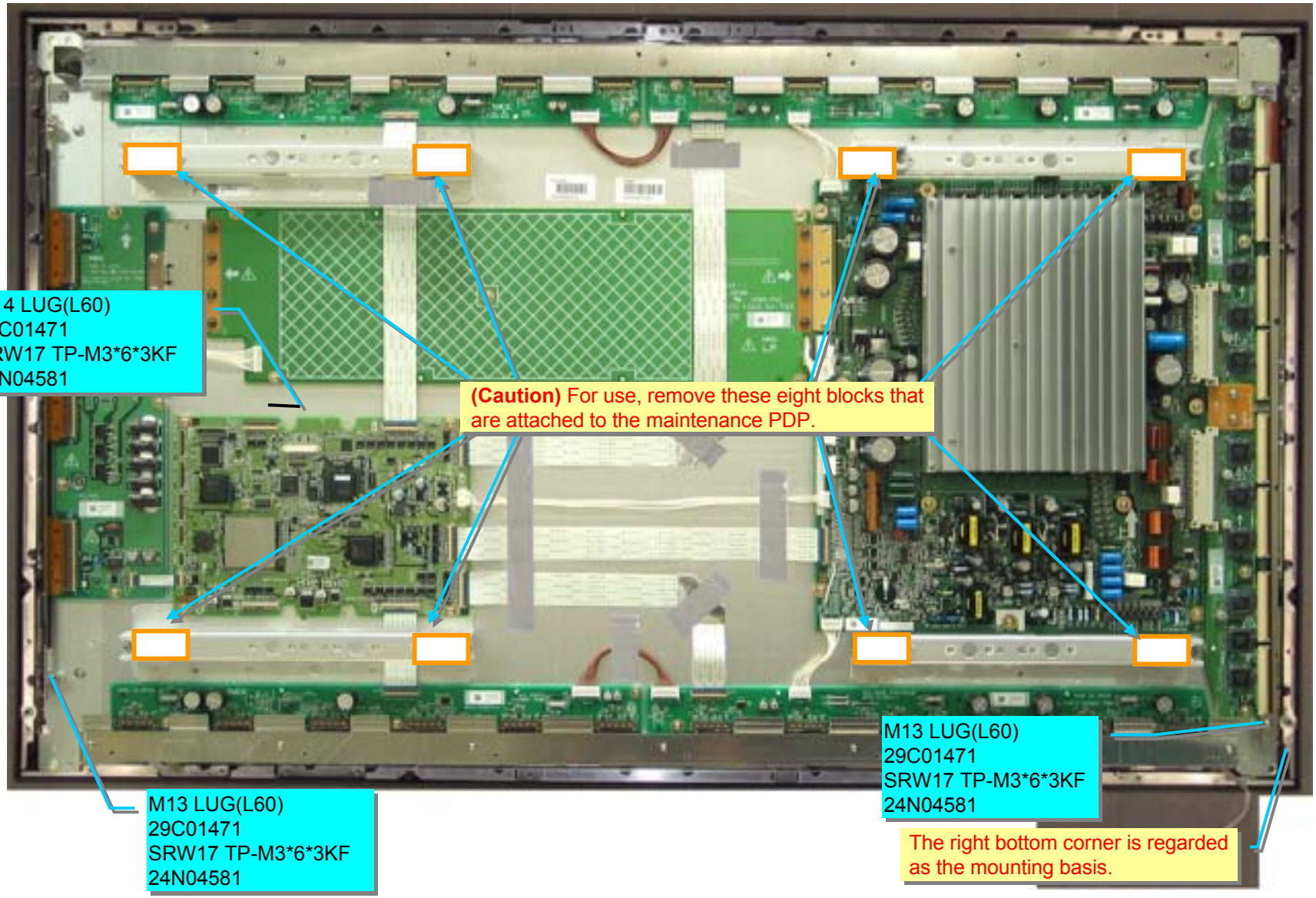
REMOVING POWER UNIT



REMOVING CHASSIS ASSY



PDP PANEL VIEW WITH CHASSIS REMOVED



CONNECTOR PIN EXPLANATION

PDP-424MV

(Caution) The operating voltages specified below are used in common irrespective of the presence of signals. In this case, however, part of the operating voltages (red characters) may change according to the signal conditions when the main power supply is turned on (POWER button ON).

Status of LED lighting: ★ for lighting in green, ★★ for unlighting, and ★★★ for lighting in red.

Vol.1

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
PN	1	D+3.3	3.3V power supply for digital circuits		0	3.3	3.3	0	0	0	-	POWER→MAIN
	2	D+3.3	3.3V power supply for digital circuits		0	3.3	3.3	0	0	0	-	POWER→MAIN
	3	D+3.3	3.3V power supply for digital circuits		0	3.3	3.3	0	0	0	-	POWER→MAIN
	4	D.GND	GND		0	0	0	0	0	0	-	-
	5	D.GND	GND		0	0	0	0	0	0	-	-
	6	D.GND	GND		0	0	0	0	0	0	-	-
	7	D+2.5	2.5V power supply for digital circuits		0	2.5	2.5	0	0	0	-	POWER→MAIN
	8	D+2.5	2.5V power supply for digital circuits		0	2.5	2.5	0	0	0	-	POWER→MAIN
	9	D+2.5	2.5V power supply for digital circuits		0	2.5	2.5	0	0	0	-	POWER→MAIN
	10	D.GND	GND		0	0	0	0	0	0	-	-
	11	D.GND	GND		0	0	0	0	0	0	-	-
	12	D.GND	GND		0	0	0	0	0	0	-	-
PM	1	M+7	7V power supply for microcomputer		6.8	6.8	6.8	6.8	6.8	6.8	-	POWER→MAIN
	2	D.GND	GND		0	0	0	0	0	0	-	-
	3	POWER	Power control		0	4.9	4.9	0	0	0	-	MAIN→POWER
	4	D.GND	GND		0	0	0	0	0	0	-	-
	5	POMUTE	Mute signal for AC power OFF		4.8	4.8	4.8	4.8	4.8	4.8	4.8→-	POWER→MAIN
	6	SW7	Power start control		0	6.8	6.8	6.8	6.8	0	-	POWER→MAIN
	7	N C	Non-connection terminal		-	-	-	-	-	-	-	-
PV	1	A+12	12V power supply for analog circuits		0	12	12	0	0	0	-	POWER→MAIN
	2	A.GND	GND		0	0	0	0	0	0	-	-
	3	A+6	6V power supply for analog circuits		0	6	6	0	0	0	-	POWER→MAIN
	4	A+6	6V power supply for analog circuits		0	6	6	0	0	0	-	POWER→MAIN
	5	A.GND	GND		0	0	0	0	0	0	-	-
	6	A.GND	GND		0	0	0	0	0	0	-	-
	7	NC	Non-connection terminal		-	-	-	-	-	-	-	-
	8	NC	Non-connection terminal		-	-	-	-	-	-	-	-
AU	1	AU_L	Audio signal L CH		0	Selected input signals are output.	Selected input signals are output.	0	0	0	-	MAIN→AUDIO
	2	GND	GND		0	0	0	0	0	0	-	-
	3	AU_R	Audio signal R CH		0	Selected input signals are output.	Selected input signals are output.	0	0	0	-	MAIN→AUDIO
	4	GND	GND		0	0	0	0	0	0	-	-
	5	MUTE	Mute signal of audio output		3.5	3.5→0	3.5→0	3.5	3.5→0	3.5	3.5→-	MAIN→AUDIO
	6	SCL7	Clock line of the I2C bus		0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	0	0	0	-	MAIN→AUDIO
	7	SDA7	Data line of the I2C bus		0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	1	1	0	-	MAIN→AUDIO
RS	1	M+5V	5V power supply for microcomputer		0	5	5	5	5	0	-	MAIN→RS232C
	2	TXD	RS232 driver output		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are received.	0	-	MAIN→RS232C
	3	GND	GND		0	0	0	0	0	0	-	-
	4	RXD	RS232 receiver input		0	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	0	-	RS232C→MAIN
	5	M+3.3V	3.3V power supply for microcomputer		0	3.3	3.3	3.3	3.3	0	-	MAIN→RS232C
	6	GND	GND		0	0	0	0	0	0	-	-
	7	REMIN2/RXD1	Data signal of wired remote control	42VM5 42VP5 42XM3 50XM4 61XM3	0	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	Clock signal (3.3Vac) when data are received; 3.3Vdc when no data are received.	0	-	RS232C→MAIN
				42VR5 42XR3 50XR4 61XR3	0	0	0	0	0	0	-	
	8	RESET SW	NC		-	-	-	-	-	-	-	-
	9	PLE_CTL	PLE control	42VM5 42VP5 42XM3 50XM4 61XM3	0	3.3V duning data transmission for Video WOLL 0V when no data are transmitted	3.3V duning data transmission for Video WOLL 0V when no data are transmitted	3.3V duning data transmission for Video WOLL 0V when no data are transmitted	0	0	-	MAIN→RS232C
				42VR5 42XR3 50XR4 61XR3	0	0	0	0	0	0	-	
	10	TXD1	RS232 driver output	42VM5 42VP5 42XM3 50XM4 61XM3	0	Clock signal used during data transmission (5Vac) 5Vdc when no data are transmitted.	Clock signal used during data transmission (5Vac) 5Vdc when no data are transmitted.	Clock signal used during data transmission (5Vac) 5Vdc when no data are transmitted.	0	0	-	MAIN→RS232C

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
				42VR5 42XR3 50XR4 61XR3	0	0	0	0	0	0	-	
	11	232C_SHUT	ON/OFF control for TXD0 driver		0	3.3	3.3	3.3	3.3	0	-	MAIN→RS232C
	12	REM	Insertion detection for wired remote control input	42VM5 42VP5 42XM3 50XM4 61XM3	0	3.3V when a wired remote control is connected/ When not connected.	3.3V when a wired remote control is connected/ When not connected.	3.3V when a wired remote control is connected/ When not connected.	3.3V when a wired remote control is connected/ When not connected.	0	-	RS232C→MAIN
				42VR5 42XR3 50XR4 61XR3	-	-	-	-	-	-	-	(NC for Model R)
TM	1	SCL5	Clock line of the I2C bus		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	0	0	0	-	MAIN→SENB
	2	GND	GND		0	0	0	0	0	0	-	-
	3	VDD+3.3V	3.3V power supply for analog signals		0	3.3	3.3	0	0	0	-	MAIN→SENB
	4	SDA5	Data line of the I2C bus		0	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	0	0	0	-	MAIN←→SENB
TR	1	SCL5	Clock line of the I2C bus		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	0	0	0	-	SENB→SEND
	2	GND	GND		0	0	0	0	0	0	-	-
	3	VDD+3.3V	3.3V power supply for analog signals		0	3.3	3.3	0	0	0	-	SENB→SEND
	4	SDA5	Data line of the I2C bus		0	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	0	0	0	-	SENB←→SEND
TS	1	SCL5	Clock line of the I2C bus		0	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	Clock signal used during data transmission (3.3Vac) 3.3Vdc when no data are transmitted.	0	0	0	-	SEND→SENC
	2	GND	GND		0	0	0	0	0	0	-	-
	3	VDD+3.3V	3.3V power supply for analog signals		0	3.3	3.3	0	0	0	-	SEND→SENC
	4	SDA5	Data line of the I2C bus		0	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	During data exchange: Clock signal (3.3Vac), Data not exchanged: 3.3Vdc	0	0	0	-	SEND←→SENC
FA	1	FAN-CTL	Voltage-controllable power supply	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-
				42XM3 42XR3	0	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	0	0	0	-	MAIN→FAN
				50XM4 50XR4	0	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
				61XM3 61XR3	0	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	FAN lock detect signal output	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
				42XM3 42XR3 50XM4 50XR4 61XM3 61XR3	0	0V during normal fan operation;3.3V dc while the fan is stopped.	0V during normal fan operation;3.3V dc while the fan is stopped.	0	0	0	-	FAN→MAIN
FB	1	FAN-CTL	Voltage-controllable power supply	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-
				42XM3 42XR3	0	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	11.5Vdc during high-speed revolution (Fan mode H); 8.5Vdc during medium speed revolution (Fan mode M); 6.5Vdc during low-speed revolution (Fan mode L)	0	0	0	-	MAIN→FAN
				50XM4 50XR4	0	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	11.6Vdc during high-speed revolution (Fan mode H); 7.8Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
				61XM3 61XR3	0	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	FAN lock detect signal output	42VM5 42VP5 42VR5	-	-	-	-	-	-	-	-
				42XM3 42XR3 50XM4 50XR4 61XM3 61XR3	0	0V during normal fan operation;3.3V dc while the fan is stopped.	0V during normal fan operation;3.3V dc while the fan is stopped.	0	0	0	-	FAN→MAIN
FC	1	FAN-CTL	Voltage-controllable power supply	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	-	-	-	-	-	-	-	-
				61XM3 61XR3	0	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	9.3Vdc during high-speed revolution (Fan mode H); 7.6Vdc during medium speed revolution (Fan mode M); 5.3Vdc during low-speed revolution (Fan mode L)	0	0	0	-	FAN→MAIN
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	FAN lock detect signal output	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	-	-	-	-	-	-	-	-
				61XM3 61XR3	0	0V during normal fan operation;3.3V dc while the fan is stopped.	0V during normal fan operation;3.3V dc while the fan is stopped.	0	0	0	-	FAN→MAIN
AD	1	GND	GND		0	0	0	0	0	0	-	-
	2	GND	GND		0	0	0	0	0	0	-	-
	3	ALARM	Module alarm signal		0	5Vdc during normal PDP operation; 0V when the PDP is out of order.	5Vdc during normal PDP operation; 0V when the PDP is out of order.	0	0	0	-	PDP→MAIN
	4	GND	GND		0	0	0	0	0	0	-	-

Name	Pin No.	Pin name	Function	Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
				AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
					No signal	With signal					
	5	PS+	PSS input PS+	0	PSS LVDS serial differential PS+ input 0Vac; Bias 1.1Vdc	PSS LVDS serial differential PS+ input 0.3Vac; Bias 1.25Vdc	0	0	0	-	PDP→MAIN
	6	PS-	PSS input PS-	0	PSS LVDS serial differential PS+ input 0Vac; Bias 1.4Vdc	PSS LVDS serial differential PS+ input 0.3Vac; Bias 1.25Vdc	0	0	0	-	PDP→MAIN
	7	MSEL	42V5 compatible interface OFF	0	0	0	0	0	0	-	-
	8	GND	GND	0	0	0	0	0	0	-	-
	9	RH+	OSD system output H+	0	OSD LVDS serial differential H+ output 0Vac; Bias 1.1Vdc	OSD LVDS serial differential H+ output 0Vac; Bias 1.1Vdc	0	0	0	-	MAIN→PDP
	10	RH-	OSD system output H–	0	OSD LVDS serial differential H- output 0Vac; Bias 1.4Vdc	OSD LVDS serial differential H- output 0Vac; Bias 1.4Vdc	0	0	0	-	MAIN→PDP
	11	RG+	OSD system output G+	0	OSD LVDS serial differential G+ output 0.3Vac; Bias 1.25Vdc	OSD LVDS serial differential G+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	12	RG-	OSD system output G-	0	OSD LVDS serial differential G- output 0.3Vac; Bias 1.25Vdc	OSD LVDS serial differential G- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	13	RF+	Mode system output F+	0	Video mode LVDS serial differential F+ output 0.3Vac; Bias 1.25Vdc	Video mode LVDS serial differential F+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	14	RF-	Mode system output F-	0	Video mode LVDS serial differential F- output 0.3Vac; Bias 1.25Vdc	Video mode LVDS serial differential F- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	15	GND	GND	0	0	0	0	0	0	-	-
	16	RE+	Video system output E+	0	Video mode LVDS serial differential E+ output 0Vac; Bias 1.1Vdc	Video mode LVDS serial differential E+ output 0Vac; Bias 1.1Vdc * Only for the PX-42VP4 Series, 0.3Vac and bias 1.25 Vdc in theater mode when 60Hz motion pictures are displayed.	0	0	0	-	MAIN→PDP
	17	RE-	Video system output E-	0	Video mode LVDS serial differential E- output 0Vac; Bias 1.4Vdc	Video mode LVDS serial differential E- output 0.3Vac; Bias 1.25Vdc * Only for the PX-42VP4 Series, 0.3Vac and bias 1.25 Vdc in theater mode when 60Hz motion pictures are displayed.	0	0	0	-	MAIN→PDP
	18	RD+	Video system output D+	0	Video mode LVDS serial differential D+ output 0Vac; Bias 1.1Vdc	Video mode LVDS serial differential D+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	19	RD-	Video system output D–	0	Video mode LVDS serial differential D- output 0Vac; Bias 1.4Vdc	Video mode LVDS serial differential D- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP

Name	Pin No.	Pin name	Function	Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
				AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
					No signal	With signal					
	20	RCLK+	Video system output clock+	0	Video data clock LVDS serial differential clock+ output 0.3Vac; Bias 1.25Vdc	Video data clock LVDS serial differential clock+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	21	RCLK-	Video system output clock–	0	Video data clock LVDS serial differential clock- output 0.3Vac; Bias 1.25Vdc	Video data clock LVDS serial differential clock- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	22	GND	GND	0	0	0	0	0	0	-	-
	23	RC+	Video system output C+	0	Video data LVDS serial differential C+ output 0.3Vac; Bias 1.25Vdc	Video data LVDS serial differential C+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	24	RC-	Video system output C–	0	Video data LVDS serial differential C- output 0.3Vac; Bias 1.25Vdc	Video data LVDS serial differential C- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	25	RB+	Video system output B+	0	Video data LVDS serial differential B+ output 0Vac; Bias 1.1Vdc	Video data LVDS serial differential B+ output 0Vac; Bias 1.1Vdc	0	0	0	-	MAIN→PDP
	26	RB-	Video system output B–	0	Video data LVDS serial differential B- output 0Vac; Bias 1.4Vdc	Video data LVDS serial differential B- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	27	RA+	Video system output A+	0	Video data LVDS serial differential A+ output 0Vac; Bias 1.1Vdc	Video data LVDS serial differential A+ output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	28	RA-	Video system output A–	0	Video data LVDS serial differential A- output 0Vac; Bias 1.4Vdc	Video data LVDS serial differential A- output 0.3Vac; Bias 1.25Vdc	0	0	0	-	MAIN→PDP
	29	GND	GND	0	0	0	0	0	0	-	-
	30	GND	GND	0	0	0	0	0	0	-	-
	31	GND	GND	0	0	0	0	0	0	-	-
LD	1	REMIN1	Infrared remote control data	0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	0	-	LED→PWR
	2	LEDCTL1	Standby red LED control	0	0	0	3.3	3.3	0	-	PWR→LED
	3	LEDCTL2	POWER ON green LED control	0	3.3	3.3	0	0	0	-	PWR→LED
	4	GND	GND	0	0	0	0	0	0	-	-
	5	M+5V	5V power supply for microcomputer	0	5	5	5	5	0	-	PWR→LED
PW	1	SW7	Power start control	0	6.8	6.8	6.8	6.8	0	-	PW→MAIN
	2	POIN	Power start detection	0	3.3	3.3	3.3	3.3	0	-	PW→MAIN
	3	GND	GND	0	0	0	0	0	0	-	-
	4	M+5V	5V power supply for microcomputer	0	5	5	5	5	0	-	MAIN→PW
	5	M+7V	7V power supply for microcomputer	0	6.8	6.8	6.8	6.8	6.8	-	MAIN→PW
	6	REMIN1	Infrared remote control data	0	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	Clock signal (5Vac) when data are received; 5Vdc when no data are received.	0	-	PW→MAIN
	7	LEDCTL1	Standby red LED control	0	0	0	3.3	3.3	0	-	MAIN→PW
	8	LEDCTL2	POWER ON green LED control	0	3.3	3.3	0	0	0	-	MAIN→PW
SW	1	CTL1	Key input detection	0	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0	-	SW→MAIN
	2	CTL2	Key input detection	0	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0.7~2.8Vdc when key inputs are entered; 3.3Vdc when no key inputs are entered.	0	-	SW→MAIN
	3	GND	GND	0	0	0	0	0	0	-	-
PA	1	S+12	+12V power supply for audio circuits	0	12	12	0	0	0	-	POWER→AUDIO
	2	S+12	+12V power supply for audio circuits	0	12	12	0	0	0	-	POWER→AUDIO
	3	S+12	+12V power supply for audio circuits	0	12	12	0	0	0	-	POWER→AUDIO
	4	GND	GND	0	0	0	0	0	0	-	-

Name	Pin No.	Pin name	Function		Basic operation (Numerical unit: Vdc; except for the case when units are individually indicated)							Signal direction
					AC power ON (Power cord connected to the wall outlet) ★★	Main power ON (POWER button ON) ★		Power management ★★	Standby ★★★	Main power OFF ★★	AC power OFF (Power cord pulled out of the wall outlet) ★★	
						No signal	With signal					
	5	GND	GND		0	0	0	0	0	0	-	-
	6	GND	GND		0	0	0	0	0	0	-	-
PD	1	ALARM	PDP alarm signal	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	0	5Vdc when the PDP is normal; 0V when it is abnormal.	5Vdc when the PDP is normal; 0V when it is abnormal.	0	0	0	-	PDP→POWER
	2	D.GND	GND		0	0	0	0	0	0	-	-
	3	D.GND	GND		0	0	0	0	0	0	-	-
	4	D.GND	GND		0	0	0	0	0	0	-	-
	5	D.GND	GND		0	0	0	0	0	0	-	-
	6	D+60	Vd power supply for PDP		0	60Vdc (changeable according to the PDP)	60Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	7	D+60	digital circuits		0	60Vdc (changeable according to the PDP)	60Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	8	NC	digital circuits		-	-	-	-	-	-	-	-
	9	D+170	Vs power supply for PDP high-voltage circuits		0	170Vdc (changeable according to the PDP)	170Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	10	D+170	Vs power supply for PDP high-voltage circuits		0	170Vdc (changeable according to the PDP)	170Vdc (changeable according to the PDP)	0	0	0	-	PDWER→PDP
	1	ALARM	PDP alarm signal	61XM3 61XR3	0	5Vdc when the PDP is normal; 0V when it is abnormal.	5Vdc when the PDP is normal; 0V when it is abnormal.	0	0	0	-	PDP→POWER
	2	D.GND	GND		0	0	0	0	0	0	-	-
	3	D.GND	GND		0	0	0	0	0	0	-	-
	4	D+5	5V power supply for digital circuits		0	5.15	5.15	0	0	0	-	POWER→PDP
	5	D.GND	GND		0	0	0	0	0	0	-	-
	6	D.GND	GND		0	0	0	0	0	0	-	-
	7	D+65	Vd power supply for PDP		0	65Vdc (changeable according to the PDP)	65Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	8	NC	digital circuits		-	-	-	-	-	-	-	-
	9	D+175	Vs power supply for PDP high-voltage circuits		0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	10	D+175	Vs power supply for PDP high-voltage circuits		0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
PH	1	D+5	5V power supply for digital circuits	42VM5 42VP5 42VR5 42XM3 42XR3 50XM4 50XR4	0	5.15	5.15	0	0	0	-	PDWER→PDP
	2	D+5	5V power supply for digital circuits		0	5.15	5.15	0	0	0	-	PDWER→PDP
	3	D.GND	GND		0	0	0	0	0	0	-	-
	4	D.GND	GND		0	0	0	0	0	0	-	-
	1	D+175	Vs power supply for PDP high-voltage circuits	61XM3 61XR3	0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	2	D+175	Vs power supply for PDP high-voltage circuits		0	175Vdc (changeable according to the PDP)	175Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	3	NC	Non-connection		-	-	-	-	-	-	-	-
	4	D+65	Vd power supply for PDP		0	65Vdc (changeable according to the PDP)	65Vdc (changeable according to the PDP)	0	0	0	-	POWER→PDP
	5	D.GND	digital circuits		0	0	0	0	0	0	-	-
	6	D.GND	GND		0	0	0	0	0	0	-	-
	7	D+5	5V power supply for digital circuits		0	5.15	5.15	0	0	0	-	POWER→PDP
	8	D.GND	GND		0	0	0	0	0	0	-	-
	9	D.GND	GND		0	0	0	0	0	0	-	-